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"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because Peace is enervating and no man is wise enough to foretell when soldiers may be in demand again."—GENERAL SHERMAN.

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THE ORGANIZATION OF A VETERAN RESERVE.

BY MARZO.

FOR several, more or less clearly defined, reasons the sentiment of a large part of the United States is now, as it has always been, averse to any provision for a permanent trained military force. In a certain section of the population this amounts to a fixed determination that a permanent military establishment shall not exist, and, from these radicals there are many gradations of sentiment down to those who regard the existing establishment with a friendly eye but look upon every proposition for increase or improvement with jealous scrutiny. Beyond these, the actual advocates of expansion for the military arm are so few as almost to be disregarded.

Whether these sentiments are founded upon any proper basis may well be doubted, but that is a point which it shall not be the province of this article to discuss. If they are not, the only teacher that can apply the needed correction is the severest kind of experience, and, to judge by what we have undergone in the past, some experiences that are altogether new and peculiar must be invented for our benefit.

That these sentiments exist must be admitted, as, also, must the belief that a citizen soldiery, *i.e.*, in the popular mind, a militia or volunteer force, is the best safeguard of a free nation. Admitting these circumstances, therefore, it

behooves us to provide a plan which, under these fundamental restrictions, will make available, when needed, a military force, the very best we are capable of producing.

Leveés, en masse, under modern conditions, have proved so barren of results and altogether so harmful in their undirected, or misdirected zeal, that they are now practically barred from existence. I trust I shall not give offense to those who have been members of Volunteer organizations or to those who are advocates of the system, as it is commonly understood, by comparing it closely with the *leveé en masse*. To be sure every military force existing under our government, until the direst extremity drives us to conscription, is really a volunteer force, in the sense that no man is in it except voluntarily. But the difference in status between the "Volunteer," as the term is popularly used among us, and the so-called Regular, or the Militiaman, will be readily understood. That the volunteer system, as at present applied, is recognized by many careful observers and thinkers as a failure is evidenced by the form in which the Dick Militia Bill was recently drafted and presented to Congress. The passage of the bill, even as it now stands, showed an evidence, along lines of military thought, over anything we have known in the past. The fact that the bill was emasculated, before passage, by cutting out the most important sections, those relating to the organization of a reserve force, shows that we still have not advanced far. The manner in which the emasculation took place shows that we still allow judgment to be controlled by sentiment.

I shall certainly not deny the usefulness of a volunteer force. When properly used it is a valuable adjunct to the military arm of a country like ours, but the trouble is that, with us, it never has been assigned its proper place in the scheme of defense or offense. Its place is certainly not to form the backbone of the army or the first line which will have to meet and withstand the shock of combat, especially since we must prepare to meet trained troops of the best modern military character. Moreover, we must prepare for the shock at a very early stage of any future international misunderstanding—almost without warning or preparation. It is, nowadays, a word and a blow. There are no heralds to proclaim knightly intentions in due season, nor are there formal declarations of war before the event. Orders to prepare

munitions or to mobilize troops are tantamount to a declaration. In all recent wars actions have been fought before any declaration was made. But the volunteer force cannot be called for until war is assured, which means that war has begun, and then the mobilization, organization and training of such an absolutely raw and inexperienced force is slow and laborious. If it is properly done, before they are fit for the field upon which they are to meet the enemy, trained, organized and experienced, several months will have elapsed. In the meantime, what is to serve?

It is admitted by all that the Regular Army is to form the first line. But, in any struggle of momentous proportions, it never has been, is not, and, we may safely say, never will be large enough to meet the army of a first or second-class power. Until the Dick Militia Bill was passed by the last Congress we had nothing to back up the totally inadequate Regular Army but the potential Volunteer organizations which, at the moment of action, were totally inefficient. Before the passage of that bill the National Guard lacked any possible national character, and, as a whole, was so lacking in training and experience that it was classed as so much unorganized volunteer material. It is now recognized by a Federal law, placed upon a semi-national footing, and is better provided for. If carefully nurtured and diligently handled it should become a force to be reckoned with, standing at the back of the Regular Army and ready to take the field in a short time after it is warned. Still it must not be forgotten that the National Guard will always be subject to many serious limitations. It is essentially a popular organization and must remain so, for it depends upon its popularity for its numerical strength and apparent success. Its members come from all classes, but all are habitually engaged in some employment in civil life. They are tradesmen, clerks, business men, professional men and laborers. To be welded into an efficient force demands that they be called upon to devote a considerable part of their time to the business of soldiering and, as the Guard is improved, this demand will become more and more urgent. At the same time the members will find this demand becoming more and more onerous and difficult to comply with. The fact that it is also used as a State police force brings the Guard into conflict with a portion of the population which consequently resents its

existence. As this portion is growing in strength and assertiveness through the power wielded by trades unions it will be found that its opposition will be exerted more and more strongly.

Again all experience shows that Guard organizations find it necessary to accept a large percentage of men comparatively inferior when judged by service standards, whom, when called into service, the government finds necessary to reject. Still others who are accepted in these organizations and who serve well enough as Guardsmen, when called into active service cannot comply, and no number of laws and regulations will prevent the necessity of excusing them. In this way the strength of the Guard, when most needed, is perceptibly and unavoidably weakened.

There is, however, a force of splendidly trained and disciplined men yearly going to waste under our very eyes for want of a little attention and the small amount of legislation and expense necessary to conserve it. Taking the average strength of the Regular Army as sixty-six thousand men, each enlisted for a term of three years, it will happen that something less than one-third of the whole number, say twenty thousand men, are honorably discharged and return to civil life each year after a service of from three to nine years with the colors. It is confidently believed that two-thirds of this number would gladly enter into an agreement with the Government to keep the War Department informed of their whereabouts and to respond to the call of the President to join the colors again should troops be mobilized for war purposes, they being guaranteed a yearly allowance of ten dollars, or a little more, for carrying out the terms of the contract and, of course, full pay when called into service. Supposing, however, that only half of the total number discharged, or ten thousand per year, entered into this contract in ten years from the inception of the scheme a veteran reserve force of one hundred thousand men would be created. As a result of re-examination, etc., this strength would naturally be diminished to a certain extent at the moment it is called to the colors. Surely a strength of one hundred thousand men could not be considered excessive in a force of this character, so inexpensive and safe in peace time and so reliable for war. In order, therefore, that an effective strength of one hundred thousand should be realized, when called upon, let

the additions accrue until one hundred and thirty thousand were enrolled. By that time vacancies occurring, due to death, accidents, illness, old age, etc., would absorb a considerable part of the men discharged from active service but, still, perhaps, not all who would be willing to join the reserve. The length of time given is believed to be at least double that required for the reason stated, and also for the reason that no account has been taken of the number of men who have been discharged previous to the inception of the program, from whom, doubtless, a large number might be had at once.

Now, as to providing officers for this reserve. Undoubtedly opposition would be made to any plan for the utilization of officers of the Regular Army to command any other forces in war time. For three very potent reasons, however, this opposition must, to some extent, be overcome.

The first of these has to do with the enlisted men of the Reserve. Under the proposed plan all these would be ex-members of the Regular Army, trained and accustomed to Regular methods, confident of these methods, of themselves and of the officers under whose command they had recently been. No right principle could be served by placing over these trained, disciplined and experienced men officers from civil life, untrained, undisciplined and inexerienced. It must be remembered that this force is planned for quick mobilization, to be thrown at once into the field. The men would justly resent being placed under officers necessarily inexperienced, in whom they could not reasonably feel any confidence. Led by officers coming, like themselves, from the Regular Army, officers whom they already knew and in whom they had confidence, the whole Reserve would take the field in a different body—worth three times as much as it would otherwise be.

The second has to do with the officers.

We may take the preparations for the Spanish war a representative of all our past experience. After the meagre little Regular Army, entire dependence was necessarily placed upon the volunteer levies. These absolutely inexperienced men were placed almost wholly under the command of officers as inexperienced as themselves. In order that the opportunities of the inexperienced should not be interfered with, Congress restricted by law the number of trained Regular officers that might serve with a Volunteer regiment to two

each. In but a few was even this number provided. No one can contend that the number so benefited bore anything like a just proportion to the whole. Moreover, those that were so benefited obtained their positions in a haphazard manner, without regard to the just rights of others or to any system. There was no system. We have never had any plan. We intend now to make plans before the event and it is our duty to make them properly. Perhaps it was well that no more were taken from the Regular Service during the Spanish war preparations, for this insignificant number, coupled with those that were taken from the line to do staff duty, sadly depleted and crippled the line. Therefore, let a part of the plan be such that this depletion and consequent crippling shall not take place in the future.

The third reason is the very essence of the whole matter—the efficiency of the Reserve as a military body.

If it is a good policy to make use of the discharged and enlisted men of the army on account of their long and thorough training in correct methods and their experience, in order to obtain an immediately effective force; if, by so doing, we are providing for the best military force, for urgent need, that we are capable of producing; how much more necessary is it to provide this force, in part, at least, with officers who are already trained, experienced and efficient. If it is a bad policy to let the potential force of these men discharged from the army go to waste, how much worse is it to make waste of a number of officers of the army, of still longer training and greater experience, who have spent the best of their lives in preparing themselves for this very work and these very positions, of which, at the time of greatest need, they are deprived by new comers whose experience begins on the day upon which their regiments are mustered into service.

It can scarcely be held to be too great a concession to the trained officer to provide that each regiment of Reserve should have its field officers taken from the officers of the Regular Army. In order to effect this according to system and according to a system which will provide officers of the best training and, at the same time, will prevent the perpetration of injustice to others, let the field officers of the Reserves be taken from the officers of the army, each from the head of the list of those of next lower rank in the permanent establishment.

Suppose the Veteran Reserve to be of one hundred thou-

sand enlisted men and the strength of the Regular Army, on a war footing, to be also one hundred thousand. Each would then contain the same number of organizations. It is fair to assume that the Reserve could be kept divided into the three main arms, Cavalry, Infantry and Artillery, each in the same proportion as those of the permanent establishment.

Take the Infantry arm, then, as an example. If Lieutenant Colonel Smith, of the 21st Regiment of Infantry, stands at the head of Lieutenant Colonels of Infantry in the permanent establishment, let him be given a provisional commission as Colonel of Reserves and assigned to the First Reserve Infantry. And so on for the entire thirty Lieutenant Colonels. In like manner the first thirty Majors of Regular Infantry would receive commissions as Lieutenant Colonels of Reserve, and the first ninety Captains would receive commissions as Majors, each being assigned continually to some regiment of Reserve Infantry.

These provisional commissions would carry with them no increase of rank or pay until the Reserves were called out, when they would immediately become operative. Each of the Lieutenant Colonels of Infantry would immediately assume command, as Colonel, of his own regiment of Reserves. Each of the first thirty Majors of Infantry would immediately join, as Lieutenant Colonel, his own regiment of Reserves, while the next thirty would be immediately promoted, temporarily, as Lieutenant Colonels to fill the places in the regular establishment made vacant by the departure of the thirty Lieutenant Colonels to command Reserve regiments. In like manner the first ninety Captains would join their reserve regiments as Majors, while the next sixty would fill the places vacated by Majors who had joined Reserve or Regular regiments as Lieutenant Colonels. This would leave one hundred and fifty vacancies in the list of Captains in the permanent establishment to be filled by the provisional promotion of that number of First Lieutenants, and their vacancies by a like number of Second Lieutenants, from the head of the lineal lists. Finally, the vacancies in the list of Second Lieutenants should be filled, provisionally, by appointment from the army or from civil life. This scheme of promotion is not complex. It could be kept constantly arranged and provided for with but little extra labor and few additional records in the War Department. It would produce a healthy flow of promotion

in the proper channel. It would provide the means for properly placing worthy and efficient officers where most needed, and at no one else's expense. It would prevent, in great measure, the humiliating and ridiculous experience of seeing men of long and honorable years in the service of their country, acknowledged by all to be among the best officers of the armies of the world, finding themselves under the command of others totally without military experience or prestige, but for the moment, accidentally holding superior rank in the armies of the United States. Also it would preclude the occurrence of such cases as were recently beheld, quite as ridiculous, of Lieutenants suddenly elevated to command over officers of five times their length of service and experience, who were, but yesterday, their superiors by hundreds of files. It may be commendable in the individual senior to submit gracefully to such conditions, but, all in all, it is not wholesome nor for the good of the service.

For the quickest efficiency of these regiments, the chief object to be attained, it would be better to select their regimental staffs, in a similar manner, from the line of the army. Their company officers would be left to other means. Following a plan already made, lists of men worthy of bearing such commissions would be kept—graduates of schools where military instruction is given under the direction of officers of the army; civilian applicants who have passed necessary examinations; and, especially, for these regiments, of enlisted men of the Army who have been recommended and who have passed examinations, but for whom no vacancies have existed in the regular service.

Points at which each regiment is to mobilize should be selected beforehand, and the men of whom it is to be composed, selected, so far as possible, so as to have their residence in the district of which the mobilizing point is the center. Arms and equipments to fully supply it should be manufactured and stored in Arsenals and store houses, either at the mobilizing point or conveniently situated for shipment to that point immediately when needed.

Now, supposing that all the field officers are serving within the limits of the United States when the Reserves are to be called upon, within five days from the time they receive notice all could be at hand, ready to take up the task of organization. At the same time the men of the regiment, who

should always know at what point they are to report, and the candidates who are to fill the places of its company officers could receive their warning and would begin to report at once. Ex-non-commissioned officers in former service would be known, the arms, equipments and stores would be at hand, and, within a fortnight from the date of the mobilizing order, the regiment should be organized, fully equipped and ready to take the field, a fairly efficient and homogeneous force.

No serious encroachments are made upon the prerogatives of the ordinary citizen to become an army officer in short order. The places of the company officers of this reserve are open to him, as are also from one hundred and fifty to two hundred and forty places as Lieutenants in the Regular Army. Then, besides these the National Guard, a citizen body, carries its own officers with it, and, finally, will come the Volunteer force, as of old, but now assigned to its true and only proper place in the scheme of National defense or offense.

We shall have, then, as a first line with which to face the enemy, the Regulars of the permanent establishment. Second, the Veteran Reserve, which will follow it closely or accompany it to the field. Third, the National Guard, rehabilitated and made ready for service. And, in training, standing at the back of all these, the Volunteers, the greatest body, numerically, of them all.

Honorable Mention Essay.

THE ORGANIZATION AND FUNCTIONS OF A BUREAU OF MILITARY INTELLIGENCE.

By Major ROBERT K. EVANS, United States Infantry, Assistant Adjutant-General.

KNOWLEDGE is power. In no department of life is this so true as in war, and in everything pertaining to it.

Generals in the field leave no stone unturned to gain information as to the enemy, his number, position and intentions. To this end they send out patrols, scouts and reconnaissances in force, and even fight engagements of considerable magnitude. An excellent example of this is furnished by the tactics of General J. Franklin Bell in the Philippines. When he was on the staff of General MacArthur, he was charged with the duty of collecting military information for the Division. His methods, like everything great, were simple. He would take a detachment of Americans and deliberately break through the Filipino lines, generally under fire, and then calmly proceed to study their strength, position, and the topography of the country. His undaunted courage and sound military judgment shown in these expeditions and reports brought him prominently to the notice of his superior officers, and resulted in his well-merited promotion.

Spies are important sources of information. No successful general ever fails to avail himself of their services. Frederick the Great said, "You cannot pay a good spy too well." Often the best and most prominent officers will undertake this important and dangerous duty.

So much for that special military information which must be obtained at the cannon's mouth, after the declaration of war, and while the hostile armies are in actual contact. There yet remains a vast field of useful if not indispensable information which can only be obtained in times of profound peace, before the relations of the nations concerned have even become in the least strained.

In order to intelligently make war it is necessary for us to know, at the very inception of our plans, what are the resources in men, money and war material of the nation which is to be our enemy. It is evident that we cannot send our agents abroad to gather this after war is declared; they would not be allowed to enter the enemy's country. If they succeeded in slipping in and were discovered, they would be hanged as spies. Even if some attained their object, the information would arrive too late to be of use.

What is a Bureau of Military Intelligence?—It is a storehouse of every kind of knowledge which may be useful in preparing for war, in the first place, and, later, for its intelligent prosecution. Without this knowledge in such shape as to be instantly available, any nation, however brave, rich and populous, will find itself, in the face of actual war, like Polyphemus—strong, but blind.

Whatever organization or individual is charged with organizing and equipping our army for any given war, must have in hand the answers to two questions as the absolutely necessary data for solving the problem: First—what military force will we encounter? Second—what size and kind of army must we produce in order to crush the enemy and force an honorable and advantageous peace in the shortest practicable time? We might have a war with a people so weak as to allow us to defeat them by the regular army alone; or, we might be involved in complications so vast as to require the development of the entire military power of the nation—possibly an army of 5,000,000 men. Between these limits the brain of the army must work in deciding all questions in regard to that army to which the duty will be confided of protecting the honor of the flag and the integrity of our domain.

ORGANIZATION.

In considering the first part of the subject—the organization of a Bureau of Military Intelligence—let us briefly consider the manner in which some of the great Powers have answered it.

Probably the first bureau of this description was established by Napoleon, under the name of the "Bureau of Secret Police," organized by Fouché. It was never extensively developed. The brain of Napoleon was the Military Informa-

tion Division of France, and when he fell from power, the scheme for a time fell into disuse. Yet he was the first to put into practice the idea of collecting and treasuring every kind of information about his neighbors which could be of use in war.

It is an interesting fact that the two most salient features of the German General Staff system, on which their wonderful success in modern wars depended, were first suggested and used by Napoleon, viz.: A Military Information Bureau; and the General Staff map. When he over-ran Germany, after the Jena campaign, he ordered his engineers to make a map of the country on a scale of $\frac{1}{100000}$. During the Russian campaign his engineers continued the work. When his baggage was captured at the crossing of the Beresina, a number of these maps were found among it. The sheets are now in the library of the General Staff in Berlin. Thus, practical Germany has taken from the quiver of her arch enemy his best arrows, and used them with deadly effect against his own people in the succeeding generation.

At present France has a Military Information Bureau, in which twenty officers are employed.

In that of Spain, there are thirty-eight officers—an unusually large number.

There is a great similarity in the organization of these institutions in Russia, Austria and Italy.

In every country where there is a General Staff, the Military Information Bureau is under its Chief.

As our military institutions are more similar to those of England than any other nation, a special consideration of her Military Intelligence Division will be most pertinent to this article. It is a Bureau of the War Office, and is directly under the Commander in Chief.

It is organized under a Major General, with the title of Director of Military Intelligence, having under him one Colonel, four Lieutenant Colonels, six Majors, eight Captains, and five civilian clerks, fifteen lithographic draughtsmen, four privates, one photographer, one stone-engraver. Total: 20 officers and 26 civilians.

"The Director of Military Intelligence deals with the preparation of information relative to the military defense of the Empire, and the strategical consideration of all schemes of defense; the collection and distribution of information

relating to the military geography, resources and armed forces of foreign countries, and of the British colonies and possessions; the compilation of maps and translation of foreign documents. He conducts correspondence with other Departments of the State on defense questions, and is authorized to correspond semi-officially with them on all subjects connected with his duties."

The Bureau is divided into eight sections, charged with collecting, indexing and filing information, as follows:

SECTION A.

Two Officers and One Clerk.

Business. —France—Belgium—Italy—Spain—Portugal—Central and South American States—Mexico.

SECTION B.

Three Officers and One Clerk.

Business.—The British Colonies, Protectorates and Spheres of Influence—Polynesia—Cyprus—South African Republic—Orange Free State and adjoining Native States—Imperial Defense.

SECTION C.

Two Officers and One Clerk.

Business.—Germany—Netherlands—Denmark—Switzerland—Sweden—Norway—United States—Cuba—Porto Rico—Philippine Islands.

SECTION D.

Two Officers and One Clerk.

Business.—Russia—India—Burma—Siam—China—Central Asia—Japan—Afghanistan—Persia and Maskat-Sokotra.

SECTION E.

Two Officers and One Clerk.

Business.—Austria—Hungary—Ottoman Empire—Roumania—Greece—Servia—Montenegro—Bulgaria—Crete—Egypt—Somaliland—Congo Free State—Morocco—Abyssinia, and those portions of Africa still under independent native rule.

SECTION F.

Three Officers and Three Clerks.

Business.—Maps for military purposes. Issues of maps, except Ordnance Survey. Questions affecting the reproduction of maps and sketches, and the issue of all maps to the Army, except those for Engineers' services. Consideration of frontier questions. Drawing and lithographic establishments.

Map Room.—Charge of all maps, plans and charts. Astronomical calculations and record of positions fixed astronomically. Index of geographical information and record of travelers' movements. Distance measurements for other departments.

SECTION H.

Three Officers.

Business.—Special Duties.

SECTION L.

One Officer and Two Clerks.

Business.—Library—Cipher—Government Telegraph Code and Telegraphic Addresses.

This is a well organized bureau, and may be taken as a sample of similar institutions maintained by all the great Powers.

The Bureau of Military Information which has shown itself most useful under the practical test of war is that of Prussia.

The officers of the General Staff are divided into two classes, passing by periodic detail from one to the other: First, those on duty with troops, attached to the Headquarters of Divisions and Army Corps; Second, those on duty under the immediate direction of the Chief of the General Staff in Berlin, engaged in office work. Nearly all of the officers of the second class are more or less servants and feeders to the Bureau of Military Information. They are occupied during peace with preparations for the conduct of the army in war. This work is naturally divided into different branches—one for the consideration of particular, probable wars; another for the general training of officers for the command of troops.

The great General Staff is, in peace, constantly engaged in collecting and arranging such information as will facilitate the prompt and suitable distribution and concentration of troops under any conceivable war complication, including their transportation. This necessitates a complete knowledge of geography of the countries which may be involved, and of the resources, in men and money, of the probable combatants; all of which indispensable information is placed in the hands of the General Staff by its Military Information Division.

To facilitate the study of each possible scene of war, Europe is distributed into three divisions,—one including Norway, Sweden, Russia, Turkey and Austria; the second, Germany, Denmark, Italy and Switzerland; the third, the western States of Europe, and America. A minute study is given to the resources of every European country, and a reference index printed and filed. This study does not only include strictly military matters, but goes on to the consideration of such questions as its Constitution and Finance, Industry and Trade in its various branches, as well as Posts, Railways, Telegraphs and Navigation; all of which when arranged and digested will furnish the best possible means for judging how formidable a foe may be.

It was the complete knowledge thus obtained in peace which enabled the Chief of the Prussian General Staff, at the

outbreak of the wars of 1866 and 1870, to accurately gauge the strength of the adversary, and order his dispositions accordingly.

The effect of railways upon the conditions and conduct of war has been fully grasped by the Prussian General Staff, which accomplished the extraordinary feat of transporting, in twenty-one days, 197,000 men, 55,000 horses and 5,300 vehicles over distances of from twelve to three hundred miles without accident. To the end that this branch may be thoroughly and generally understood, every officer in the General Staff serves a detail in the Department of Railways.

The Chief of the National Survey is under the Chief of the General Staff, and is charged with the map-making for the staff. This department is very completely organized, and comprises three divisions—the topographic, the cartographic and the trigonometric.

A very clear and comprehensive account of this Division of the Prussian General Staff may be found in "The Brain of an Army," a masterly essay written by Spencer Wilkinson. Some years ago a Royal Commission, under the presidency of Lord Hartington, was ordered to consider the question of military reforms in England, and especially the question of the organization of a General Staff something on the lines of that of Prussia. "The Brain of an Army" was written for the purpose of instructing and informing the British voter on this subject. It is the clearest and fullest presentation of the subject to be found in so short a space. If every intelligent American voter could be induced to read and comprehend this essay, the people, without regard to party—for all questions of army administration should always be regarded as national and not party issues—would demand the immediate enactment of some of the changes in our military laws suggested by the Secretary of War to the last Congress.

The Military Information Division of the United States is of especial interest because of its recent origin compared to that of similar institutions in the War Offices of other great nations, and because it has attained a high degree of usefulness and efficiency with a very small expenditure of money and encouragement in other ways.

Its origin was both modest and accidental. The office of the Adjutant General is organized in various divisions, in which the vast mass of official documents which it contains

is distributed, and classified and indexed according to subjects. In 1885 the Secretary of War sent to the Adjutant General a hurry order for some immediate information relative to the strength of modern armies. The information was on file in the office—probably in the Miscellaneous Division—but the number of documents in that Division was so great that it required two days to furnish the Secretary with the desired information. This incident caused the Adjutant General to organize a new division, called the Military Information Division. Its special function was to collect purely military data concerning our own and foreign services, for the use of the War Department and the Army at large. It was organized under an officer of the Adjutant General's Department, with a few clerks, and a separate equipment of pigeon-holes and files. An index system was adopted, somewhat on the lines of that in use by the office of Naval Intelligence. An invitation was then sent to the Chiefs of the War Department bureaus, to Division and Department Commanders, and to the Adjutants General of the States to furnish all important and appropriate information in their possession. It was expected that each of these officials would furnish the special and technical information pertaining to his Department: for instance—the Quartermaster General, on questions of transport and supply; the Chief of Ordnance, on small arms, guns and explosives, etc.; and each Adjutant General, a report on the organization, strength and efficiency of the National Guard in his State.

It is evident at a glance that this scheme was faulty and unpractical from the beginning. It placed the Division in the position of being dependent on individuals already burdened with their own duties, and who had little or indefinite interest in it, and no responsibility for its efficiency and success.

The Division was re-organized in 1889, under the personal supervision of the Adjutant General. Under the Act of September 22, 1888, military attachés were sent abroad, and attached to our legations in most European capitals, for the express purpose of collecting military information and forwarding it to the Division. A small appropriation was made by Congress for the purchase of books and periodicals, and for defraying certain incidental expenses of attachés.

Under these conditions the Military Information Division

found itself for the first time in a position where it exercised the functions of independent life and activity. It had its own servants abroad engaged in collecting information under its immediate direction and supervision. It had a small sum of money with which to begin the collection of a modern technical military library—such a library as no other institution in America would have the incentive to collect.

The Division was again re-organized in 1892 by the following order:

GENERAL ORDERS,
No. 23.

HEADQUARTERS OF THE ARMY,
Adjutant General's Office,
Washington, March 18, 1892.

I. The following orders of the Secretary of War are published for the information of all concerned:

WAR DEPARTMENT,
Washington, March 18, 1892.

ORDERS:

The Division of Military Information heretofore created in the office of the Adjutant General of the Army is hereby reorganized as follows:

1. The division will be placed in charge of an officer of the Adjutant General's Department, to be selected by the Secretary of War.

2. In addition to its other duties the division will be charged with—

(*a*) The collection and classification of military information of our own and foreign countries, especially with respect to armed, reserved, and available strength, natural and artificial means of communication (rivers, canals, highways, and railroads); the manufacture of arms, ammunition, and other war material; supplies of food, horses, draft animals, etc., etc.

(*b*) The preparation of instructions for the guidance of officers of the Army serving or traveling abroad, or acting as military attachés, and the arrangement and digest of information contained in their reports.

(*c*) The issuance to the Army of military maps, monographs, books, papers, and other publications, and the dissemination of valuable information on military subjects throughout all branches of the service.

(*d*) Correspondence with State authorities and militia officers on questions affecting the organization and armament of the militia of the several States and Territories and of the District of Columbia, and the reference to proper authority of questions for decision relating to tactical instruction, discipline and equipment.

(*e*) The preparation of instructions to the officers detailed by the Secretary of War to visit the several encampments of State troops and to witness the movements and exercises of the militia, as well as the digesting, arrangement, and preservation of all reports that may be duly submitted by them.

(*f*) The study and preparation of plans for the mobilization and transportation of militia and volunteers and their disbandment,

and for the concentration of the military forces of the United States at the various strategic points on or near the frontiers of the country.

3 The Division of Military Information will also have charge of a museum to be established for the proper care and preservation of such military relics as are now in the several bureaus of the War Department, or as may hereafter be obtained.

4 The officer in charge shall perform such other duties as naturally appertain to the division, or as may be hereafter assigned to him from time to time by the Secretary of War.

S. B. ELKINS,
Secretary of War.

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By command of MAJOR GENERAL SCHOFIELD,

J. C. KELTON,
Adjutant General.

This important order greatly increased the scope, power and possibilities of the Division. The thanks of the nation are due to Mr. Elkins, then Secretary of War, and his able military advisers, for the production of this order. It may be styled "the Constitution and By-Laws of the Division." If it be contrasted with similar authority for the existence of the same bureaus in the War Offices of England and Prussia, already given in full, it will be seen that ours was given as firm a foundation and as broad a field of action in its infancy as these sister institutions have worked up to by a long process of laborious development.

Since the publication of this order, few changes have been made in its organization. In fact, it would be difficult to add to its theoretical duties and powers. What it really needs is a substantial increase of its working capital—more men and money; more officers on duty in the Bureau in Washington; more military attachés in foreign capitals; and more funds for procuring information and increasing the library.

As it stands, the Military Information Division is a Bureau of the Adjutant General's Department. This is undoubtedly its fit and proper location. In all armies having a General Staff, it is immediately under its Chief. In our army, the Adjutant General more nearly corresponds to the Chief of the General Staff than any other head of a military department. In fact, it could not be placed under any other department without a manifest violation of the principles of sound military administration.

At present, the immediate Chief of the Division is a Lieutenant Colonel of the Adjutant General's Corps, detailed and

selected by the Secretary of War. He is assisted by thirteen clerks and five officers, detailed from their regiments. This is a small list when compared with the number at the disposal of the Chiefs of similar institutions in other armies.

Now that we have returned to a peace status, it would be in the interests of the service to detail a much larger number of line officers for this duty. These officers should be carefully selected for fitness and efficiency, and especially with a due regard to a knowledge of foreign languages. Such a detail would be in the nature of an advanced educational course in the broadest phase of the profession of arms. All military attachés should serve a detail in the Division before going abroad so that they might obtain a thorough practical knowledge of the needs of the institution.

For several reasons, the number of the officers employed in the Bureau in Washington should be as great as possible, and the number of civilian clerks should be reduced to a minimum; First—because the work there is an excellent training for officers; and, Second—because much of the information on file should be held as confidential, and some as strictly secret. The publication of such information in times of strained relations might not only seriously embarrass the government, but even defeat its plans. The power of the government to control and discipline commissioned officers is so immeasurably greater than its authority over civilian clerks as to make it evident that the former should be preferred and used as far as possible for this important and confidential duty.

At present we have military attachés on duty in only six foreign countries, viz.: France, England, Germany, Austria, Japan and China. We should at least be represented by attachés in Russia, Mexico, and the more important South American republics.

The Division is organized in sections as follows:

1. Photograph.
2. Maps.
3. Military Progress.
4. Library.
5. Militia.
6. Latin America.
7. Frontier.

This organization is as complete and comprehensive as is necessary with the present meager resources in officers,

clerks and money, at the command of the Chief. When its working capital is increased, the organization will easily and promptly accommodate itself to bettered conditions.

The work of the Division has been most creditable and valuable. At the beginning of the Spanish war it furnished the government with much valuable information which could not have been obtained from any other source or by any other means.

For some time past it has published a book, called the "Annual," which is a consolidation of the most important facts collected during the preceding year on the military progress of the world.

Last year it published a history of the war in Africa, compiled from the reports of our miltary attachés to both the British and Boer armies.

The most important work of the Division is confidential or secret, and is not published.

The work of the map section has been particularly successful. The Division furnished the army with excellent maps for field service in the campaigns of Cuba, Porto Rico, and the Philippines.

FUNCTIONS OF A BUREAU OF MILITARY INTELLIGENCE.

The functions of a Bureau of Military Intelligence may be briefly summarized as follows: First—Collecting information; Second—Using information.

COLLECTING INFORMATION.

In some respects a Military Information Bureau is like a large news agency, which cannot do business successfully without an adequate number of special agents in various parts of the world, charged with the duty of collecting and sending to the main offices just such items as are needed.

The first and most important sources of information are military attachés. To successfully acquit himself of his duties, a military attaché should be a representative American officer. Now that we have just passed through two wars, he should have seen actual service in the field, and should have a good record to his credit. Those accredited to embassies should be of rank not lower than that of Major. Military attachés in general have a position quite separate and distinct from the rest of the Diplomatic Corps, to which they are

attached more in name than in fact. No government is flattered to have a young lieutenant of no especial knowledge or experience sent to it in that capacity. For instance, the Emperor of Germany takes a great personal interest in the military representatives sent to his court. He grants them a special and personal audience on entering upon and being relieved from duty in Berlin. He has a most happy faculty in making them feel that they are his guests, and his comrades and co-workers in the great profession of arms, which, along with the art of governing, is the only trade of kings. As they come to him for the express purpose of gathering information about his army, as a simple case of reciprocity he frequently questions them about the services they represent. There is no more acute, able and searching questioner than he on military matters; he knows the soldiers' trade from the a b c of tactics to the broadest principles of strategy. When he wastes his questions on a callow youth of small professional attainments and no actual experience, he naturally thinks that some government has blundered in the selection of a military attaché.

A military attaché should be a man of sound common sense, and of that indefinable quality known as "tact." There is no position in the gift of the President in which a man, lacking those characteristics, can make more trouble for himself and more embarrassment for his government.

We sometimes hear military attachés jokingly spoken of as "gentlemen spies." It would be well if it were authoritatively determined and announced that we will not use our military attachés as spies in the countries where they are sent diplomatically. This is more a matter of policy than of sentiment. These officers are regularly accredited as a part of our embassies or legations. When one of them is found, or strongly suspected, of being in the spy business—that is, seeking information which is held as secret—he must be immediately recalled; and moreover, our diplomatic representatives will probably come near, if not actually into the "non grata" class, with the government concerned. If it should become necessary to have such information, it should be procured by agents other than, and entirely separate and distinct from, our regularly accredited military attaché, who is, in a sense, a guest of the government to which he is sent.

After all, the bulk of the military secrets of European nations are of little or no value to us. In general, what are those secrets which they guard with such jealous care? The mobilization scheme; the plans for the initial concentration the opening campaigns, in the event of war with their neighbors; and the position and character of their defensive works. None of these are of practical importance to us, and are not worth endangering our friendly and cordial relations with a single European power. If any nation has a better gun, shoe, or other piece of equipment than ours, or if its organization, administration and tactical methods are better than ours, these are points of interest to be reported.

In some countries attachés are closely watched by detectives, especially detailed for the purpose, and reports of all their movements, habitual haunts, special friends, and so forth, regularly submitted to the Secret Police; hence an attaché cannot be too careful of his conduuct and associates. He should especially avoid conspicuous intimacy with the representatives or agents of governments supposed to be hostile to or even unfriendly with the nation to which he is accredited.

The pay and allowances of our military attachés should be increased; they are at present the most meagre and niggardly given by any first-class power to officers on that duty. The English military attaché in Berlin receives five thousand dollars a year, regardless of rank,—more than the pay of a Colonel in our service,--while the extra allowance of our attachés on all accounts, would not reach five hundred. Some countries make a special allowance for entertaining while extending and receiving official courtesies.

The Adjutant-General of the Army, in his last annual report, calls attention to this subject as follows.

"The proper selection of officers for the important and delicate duty of military attachés to the several embassies and legations is greatly hampered and restricted by the fact that the additional expense to the officer involved by his acceptance of a detail so burdensome that only those possessing private means can afford to serve in that capacity. In such cases even positive injustice is done to the officer having the requisite qualifications and able to accept the position, by forcing him to spend his private means in the peformance of a public duty.

"It is therefore again urged that the attention of Congress

be earnestly called to this subject, in order that, by suitable legislation, capable officers may be able to respond, without injustice to themselves, to the call which may be made upon them for special duty abroad. It is recommended that every officer while so serving shall have the rank, pay and allowances of a lieutenant colonel."

Some idea can be formed of the amount of money spent by European nations on their attachés and military information service from a book which appeared a few years ago in France, by Lieutenant Froment, "Military Espionage, Secret Service Funds of the Ministry of War, and the Military Information Service in France and Abroad."

This book gives a very good history of the workings of the Information Bureaus of Europe. So far as the French Military Information Service is concerned, it is learned, by scrutinizing the Budget, that aside from the large Secret Service fund annually appropriated for the use of the Minister of War, and which amounts to 530,000 francs, for the purpose of secret missions, military information and costs of detective work, there is, under another chapter, entitled 'Extraordinary allowances for traveling and special missions,' the item of 189,500 francs for extra pay for military attachés, 21,000 francs for traveling allowances for military attachés, 10,000 francs for special missions abroad, and 10,000 francs for officers sent specially to attend foreign maneuvers.

From the French point of view, Lieutenant Froment urges a liberal allowance of Secret Service funds to all officers on confidential work under the Military Information Service. He states that the military attachés abroad, in addition to their pay, are allowed special pay, calculated upon a basis of about 1,000 francs a month, besides their traveling allowances. Those sent specially abroad on a secret mission get, besides their pay, such part of the Secret Service fund annually appropriated for the use of the Minister of War, as may be deemed necessary.

The author also refers to the immense fund which is available in Germany, and to German officers on special missions The great bulk of that German Secret Service fund, which amounts to about 8,000,000 francs a year, comes from the confiscation of the royal funds of the Kingdom of Hanover and is now exclusively devoted to the procuring of information for the General Staff of Germany.

This author also refers to the close watch which all nations keep upon the foreign military attachés accredited to them.

About the same time a very exhaustive and interesting book on the same subject was written by a Russian Colonel, the German translation of which was forwarded by our military attaché in Berlin. They are interesting and useful to us in showing what sort of military examination our foreign friends are constantly subjecting us to in time of peace. Hence, if we would keep step with them we must return the interest they take in us by carefully studying their military establishments, with their offensive and defensive capabilities.

The army lists of all nations are an important source of information; they should be regularly collected annually. From the study of them, the organization and peace and war strength of an army can be learned.

The Budgets of foreign nations, especially of military items, should be carefully studied. When we know how much money a nation is spending on her army, we can form a very fair idea of what she is doing in that line.

All changes in organization, armament and equipment should be reported and considered. This information could not be so well obtained in any other way as by an intelligent, energetic military attaché.

The general and special orders of all war offices, if obtainable, should be kept on file.

A complete file of one or more of the leading newspapers in each country should be kept in the Division. Now that the liberty of the press is so generally conceded in civilized countries, military information often creeps into the pages of the great dailies in spite of the efforts of the government to prevent it. One of the few complete files of the *London Times* from its earliest publication, is in the Military Information Bureau of Prussia. During the War of 1870–71 some important items of information about the French army came first to the German Staff through the columns of this paper.

Often deductions of importance can be made from the study of a paper, even when forbidden to give out military news, by a simple and patient process of patch-work. This has already been done by us during the Spanish war.

Important as it is to know the strength and resources of our enemy, it is even more important to know our own ca-

pabilities. "Know thyself," in the estimation of the ancients the summit of wisdom, has not declined in importance in the lapse of ages. This information can be derived from the various departments of our own government, and from a careful study of our vast resources, as yet to a great extent unclassified for military purposes.

So much for the principal sources of information. But still more important is the skill and ability with which the information, when collected, will be utilized.

USING INFORMATION.

The principal and ultimate object of collecting information in time of peace is to have it ready for instant use at the approach of war.

> "What King, going to war against another King, sitteth not down first, and consulteth whether he be able with ten thousand to meet him that cometh against him with twenty thousand?" Luke 14:31.

Here St. Luke has put before us in terse and pregnant form the first problem that addresses itself to the military staff of a nation about to go to war. From the form in which the question is put it is evident that the evangelist did not contemplate the existence of kings or governments so blind and fatuous as to neglect and fail not only to consult, but to conclude and determine how many men must be called to arms before subjecting the country to the uncertain chances of war. But, strange as it may seem, there are recorded in the history of the nineteenth century many instances in which governments have lost battles and campaigns, and even suffered ultimate defeat, by a failure to carry out this primary duty in inaugurating war—to first weigh the enemy, and then apportion their armies accordingly.

Without going into details about our neighbors, we can find sufficient striking examples of this in our own brief history: In the war of 1812, though we had the advantage of fighting on the defensive, of being invaded in our own territory, yet we never called out enough men to meet the British in sufficient force to thoroughly whip their armies. The only victory which came to our arms on land in that war was at New Orleans, and that happened after peace was signed. In

the Mexican War, it took us more than two years to capture the City of Mexico and force a peace. Had we put the same number of men in the field at the beginning that we later called out in detachments, the war would have been ended in one campaign of less than a year. In the war between the States from 1861 to 1865, the failure on the part of the government at the outbreak of hostilities to properly appreciate the true proportions of the military problem before it, was most striking. It was a great and terrible mistake, and was responsible for a vast and prodigal waste of blood and money and a great loss of national prestige due to the long duration of the war. It required several months of bitter experience, hard knocks, and some disastrous defeats, before the war-making power practically realized that we must have an army of about a million men to subdue the South. Had our "King" followed the suggestion of St. Luke, and "sat down first to consider" how many men we needed, history would have been quite different, and the duration of the war would probably have been greatly lessened.

Next to actual defeat, followed by an ignominious treaty with the payment of war indemnity, nothing is so expensive to a nation in life, money and prestige, as a war dragging on into years, when it might be concluded in months by proper foresight and energy.

The Military Information Bureau of Prussia has been referred to as the most practically successful of any yet established. The following is an example of the way in which it is used: When Prussia went to war with Austria and the rest of the German States, von Moltke was the Chief of the General Staff, and the actual head and user of the Military Information Bureau. In its files he found ready to his hand all the data necessary for the solution of the problem before him. It was the perfectly filled tool chest in the hands of the master workman. Long before the rupture with Austria came about, every detail of the mobilization plan had been carefully and minutely worked out and approved by the War Lord, the King.

Every nation, be it monarchy or republic, which contemplates the possibility of going to war, should have a mobilization plan in some form worked out carefully and deliberately in time of peace, and approved by the supreme war-making power.

The first step in preparing for war is to fix the amount of force required. In order to do this it is necessary to know the strength of the enemy, what force he has under arms at the beginning, and to what extent he may be expected to augment it from time to time. To work out this problem full and reliable statistics as to the undeveloped ultimate war resources of the enemy must be at hand. In 1859 Austria went to war with France and Sardinia, and brought into the field a little more than half her army. Austria was defeated through a failure to work out the answer to that question —"How many?"

When von Moltke addressed himself to this problem he calculated that he must meet 400,000 men. After the war it was ascertained that Austria and her allies had actually put into the field 390,000 men. The over-calculation of 10,000 men operated practically as an additional factor of safety to von Moltke's advantage. Nothing is more dangerous in war than to under-estimate the enemy. The old "battle-thinker" was on the safe side.

The next step is to determine the points of concentration and the number of troops to be assembled at each of them; but this is dependent on the amount of force which the enemy may be expected to develop in the vicinity of each of these points. These questions must be worked out from accurate information; otherwise it is not calculation, but mere guesswork. The primary concentrations of an army at the opening of a campaign are matters of great importance. A mistake here may lead to a disaster which may prove irreparable.

After these steps are taken, it is only practicable for the war-making power to determine the nature of the war to be waged, whether it is to be aggressive or defensive. It is not possible in peace to make any further plans. They must wait until some battles have been fought, and either won or lost; and until the enemy has shown its hand, and, to some degree, discovered his plans.

Without his Military Information Bureau, and the accurate data which it gave him, von Moltke could not have based his plans on reliable computations; he would simply have been a blind guesser instead of the most unerring military calculator in history.

In regard to that most important question—the proper use of information, before and at the outbreak of war, the

government of the United States is lamentably deficient. In fact, this never seems to have been seriously considered. It appears that nothing has been learned from past experience, for the same mistakes made in the war of 1812, in regard to raising and officering volunteers, were repeated in the war with Mexico, in the war between the States, and in the Spanish War. Unless some definite plan is calmly and deliberately devised and adopted in peace, there is no reason to believe they will not again be repeated in the inevitable hurry and confusion of making war plans after peace is broken.

It has been shown that a Military Information Bureau is only a tool-chest, ready and waiting for the hand of the master-workman. We have quite recently made some progress in providing the tools; it is an excellent start in the right direction, and a very creditable product as far as it goes; but no step has been taken towards providing the workman who is to use the tools. This person who uses them, and who will be charged with the duty of working out the details for the plans of expanding, mobilizing and concentrating our armies in war, must be a man of recognized ability. He must be thoroughly conversant with the principles and technicalities of the military profession; he must possess the confidence of the President and the respect of Congress. To be thoroughly useful and successful he must be a man who will serve the President with that devoted personal loyalty which the military professional code of honor demands from all staff officers to their chiefs. For this reason he should hold his appointment at the will of the President, as do the staff officers of colonels and generals. Instances in which officers, selected by and voluntarily serving with a chief, have failed to render him devoted and loyal service, are almost unknown in our army. Heretofore our laws have not provided the President with a recognized military adviser and assistant. The question now arises if it is not the duty of the government to provide the President with such an assistant, to aid him in his Herculean work of Civil, Executive and Military Commander in Chief. This is a subject which apparently has not been considered by those in the government having the power to dispose of it.

Who, at present, constitute the President's military staff? The Secretary of War, the General of the Army, and the Adjutant General of the Army may be considered as com-

posing that body. Which of these officers is supposed to use the tools and work out the plans? Not the Secretary of War; he is a civilian, and not presumed to bring to his important office the necessary technical military knowledge. Moreover he has not the time; he is already an overworked man; the statutes impose upon him a mass of important work much of it semi-civil in nature, sufficient to fully occupy his time and strength. Not the General of the Army, for he generally holds his position not by appointment of the President actually in office; moreover, he is at the head of that class of officers who, by law, exercise command. He is not a staff officer, whose duties and functions are to assist and advise a chief. At the time of all others, when he would be most needed by the President, during actual war, he would, following the tradition of the office, be absent from the Capital, commanding an army in the field. General Scott commanded in Mexico; General McClellan and General Grant in the Civil War; and General Miles in Porto Rico. It would be impossible for him to discharge the important duties of Chief of Staff to the President without an entire change of title and functions, incompatible with the legal limitations and historic traditions of the office.

Not the Adjutant General of the Army; his duties are already defined by statute. They are most important, and more than enough to thoroughly occupy a man of however great ability and faculty for work. No man who knows of the Adjutant General would suggest adding a new department to his labors. It is wonderful that any man can live and hold that office.

From all of which it appears that our laws do not provide for furnishing our President with an officer charged with the duty of making out and formulating the preliminary plans for going to war in an orderly, systematic and business like manner. If now we would avoid the turmoil and confusion which has reigned in the War Department at the beginning of all our wars, and the many mistakes in organization and appointments which have resulted from allowing war to come upon us without any digested plan for meeting it, we must add a new office, with duties separate, distinct and clearly defined, at the very top of the military hierarchy. He will be Chief of Staff to the President. His title is unimportant,—his duties all important.

Since the establishment of our government we have changed the organization of our army very little, especially in the higher grades. In the meantime all the nations of Europe have created the office of Chief of Staff to the sovereign or war-lord. Republican France, as well as Imperial and autocratic Russia, has her Chief of the General Staff. The office of Chief of Staff is not a mere question of military fashion; it is a necessity, brought about by the vast proportions of modern armies, extending to the enlistment of entire nations in arms, and the greater areas which military operations may cover, due to steam transportation and electric communications. These new features have necessitated the creation of a plan-maker next to the war-lord, charged with the special duty of devising and submitting plans for his approval; and he should also be given power and authority to unite the efforts of all the military departments of the government, for the purpose of developing and concentrating the war power of the nation to the highest degree, and directing it on the desired points.

We have adopted railroads and telegraphs; we have had an army of more that a million men; we have always prided ourselves on being an inventive and progressive people. It is high time that we should give our President and Army the benefit of those qualities by the creation of a Chief of Staff.

It was shown in the Spanish War, and, indeed, in all our wars, that the various departments which make up the War Department, lacked cohesion and unity of action. Some high military official next to and in full confidence of the President with the authority to supervise and direct these departments, is necessary to complete the unity and efficiency of our military establishment, and put it in such shape that the President may have a machine at his command which he can work without lost motion or friction.

This subject, strictly speaking, deals only with a Military Information Bureau; yet it is not possible to discuss it alone, for that institution is a part of a trinity, all of whose members must work together in order to produce the best results. These members are the Chief of Staff, the Information Division, and a corps of competent, carefully selected General Staff officers directly under the orders of the Chief.

Without the Chief, the President is without a legally constituted, responsible staff officer, and the component di-

visions of the War Department diverge and disintegrate at the very top, where they should be welded together in a strong hand, under a wise head.

Without a Military Information Bureau, the Chief is a blind man,—a guesser of riddles instead of a solver of problems.

Without a competent corps of General Staff officers, the Chief is a laborer without hands. So, in order to complete the work which we began when we organized a Military Information Division, we must now add a Chief of Staff, and a General Staff, The problem of transportation is not solved when the quartermaster issues a wagon; unless he follows it up with a driver and a team, no hauling will be done.

Should it now be asked in what way we may expect that this scheme will actually improve our military administration in war, it may be answered as follows:

That the President will be provided with three indispensable tools to assist him in the discharge of his military duties as Commander-in-Chief, such as every executive or war-lord of a great nation must have, in justice both to himself and to the vast responsibilities of his office.

First: Let us assume that we have a Chief of Staff to the President. Every regimental commander has a staff of three captains, and he could not possibly command his regiment efficiently without them. Every General has a staff proportioned by law to his rank and the nature of his duties and he would be helpless without it. But the President,—the Commander-in-Chief,—whose duties and responsibilities are immensely greater and more important than those of any other official personage, has not a staff in the sense in which it has been recognized as necessary to equip these subordinate commanders.

Second: That we have a Military Information Bureau properly organized and equipped, and with sufficient funds to meet its demands in every way.

Third: That we have a corps of competent General Staff officers, directly under the orders of the Chief.

The organization of the Military Information Division should then be increased by the addition of a new section, which might be known under the designation of "Special Duties." In it only specially qualified officers should be employed. The duty of this section would be the working out of the details, under the immediate direction of the Chief,

of the plans for national defense. For example, the plans which can and should be worked out in peace are: The plan for the mobilization of the Army; the expansion plan; and the plan for the primary concentrations in the case of possible wars.

War generally comes upon us unexpectedly and finds us unprepared. The regular army must then be suddenly expanded from a few thousands to probably as many hundred thousands. There are in the Regular Army a considerable number of officers thoroughly educated and trained in their business; the principal feature in the expansion plan is to determine how these officers, and which of them, can be best utilized for the best interests of the service. Heretofore, at such times, hordes of office-seekers and place-hunters have descended on Washington, besieged the President, invaded the War Department, and persistently demanded important and high military appointments for themselves or their friends, some of whom have been most conspicuously unfit for the places sought.

If any one could form a clear idea of the persecution to which the President and the War Department were subjected in the first months of the Spanish War, and of the paralysis of business during office hours which resulted from this onslaught of office-seekers, let him read carefully and thoughtfully General Carter's article, "Will America Profit by its Recent Military Lessons?" in the May number of the *North American Review*, from which the following extract is pertinent:

"When the President called for volunteers, the Adjutant General's office was simply overwhelmed—swamped, in fact,—with requests for appointments, or for authority to raise regiments. If any plan for such a contingency had been previously worked out by a properly organized General Staff, business could have been conducted with much less worry and friction than was inevitable under the circumstances. To any one visiting the Department during the trying period of several months following the destruction of the Maine, it must have seemed like chaos; and, indeed, this seeming would have been a reality had it not been for a group of self-sacrificing, accomplished and experienced staff officers, scattered through the various bureaus under the control of the Secretary of War."

In 1798, just one hundred years before, when war with France seemed imminent, and after General Washington had been appointed Lieutenant General and Commander-in-Chief, he wrote the Secretary of War on the subject of the appointment of officers, as follows:

"The applications are made chiefly through members of Congress. These, oftentimes to get rid of them; oftener still, perhaps, for local electioneering purposes, and to please and gratify their party; more than from any real merit in the applicant."

The same condition existed at the beginning of the war between the States in 1861.

There is no doubt that the same condition of administrative chaos, and its accompanying muster-roll of misappointments, will again come upon us when we undertake the next war, if, in the meantime, we have not adopted a well digested plan for the expanding and reorganizing of the Army.

After all, the names and personality of the individuals appointed as commissioned officers are a matter of slight importance to the government, so long as they possess the necessary qualifications to properly discharge their duties; yet the insignificant question, whether Smith or Jones is to be a lieutenant or a general, has been allowed to well-nigh paralyze the administrative functions of the government at the approach of war,—the time of all others when the Executive and the War Department have been most in need of time to be devoted to the uninterrupted consideration of questions of the highest importance. It is a self-evident fact that the more a man finds it necessary to use political influence to get an office, the less obvious are his qualifications to fill that office.

If we had had an expansion plan, duly approved by the President, at the outbreak of the Spanish War, the cohorts of place-hunters, whose qualifications were generally unknown, and the time for the investigation of which was lacking, might have been politely turned away by the official announcement that the details for the present expansion had already been settled and approved by the President, and that their patriotic offers of personal service were fully appreciated, but that the Executive and War Department were so occupied with matters of great importance as to

make it impossible to consider personal questions at that time.

Similar advantages would have resulted had a pre-arranged plan been worked out and adopted in regard to mobilization and concentration.

The story is still current that the day after war was declared against Austria, in 1866, a friend met von Moltke walking in the Thiergarten, and said, "I suppose your Excellency is now overburdened with work and anxiety." "Not at all," replied von Moltke, "This is more like a holiday than anything I have had of late. All my plans and arrangements have been completed long ago; now that war is declared, I have only to see that others carry them out."

Whether true or not, this story is an excellent example of German foresight in war preparations.

At similar periods in our history, every high officer in our military hierarchy has been compelled to do his official work surreptitiously and at odd hours. During office hours he has been a hunted man, pursued by a pack of office seekers, hot on his trail and in full bay.

It is evident that public policy will demand that the details of such plans be kept secret. They should receive the consideration and approval of each President on coming into office, and be changed from time to time as national conditions and relations vary. There is no doubt that Congress will enact the necessary legislation to carry out any well considered war plans submitted to it by the President. Congress has invariably given our President loyal support in carrying out his plans. If the day ever comes when it fails to do so, it will be a long step towards a change in our institutions, which nothing in the past gives us cause to apprehend. No more magnificent example can be found in history of confidence in and loyalty to a Chief than was shown by our Congress in 1898 when it voted the President fifty million dollars for the national defense, and then adjourned and left him to spend it as he saw fit.

It seems inherent to our institutions, or to our national mental make-up, that we shall be a people always unprepared for war. It is neither advisable nor desirable that we shall be a "Nation in Arms," as are Germany and France; yet there is a certain degree of preparedness for the eventuality of war which it is immoral in a people or a government to

neglect. It is self-evident that, just in proportion as we are short of trained soldiers, battalions, batteries and squadrons, in that degree should our store of military information about ourselves and our possible enemies be more complete and perfect, and the organization and personnel of our higher staff more efficient and incessantly ready for the duties which will come upon it at the approach of war.

THE ARMY AND NAVY MANEUVERS AS VIEWED FROM AFLOAT.*

By Lieutenant-Commander ROY C. SMITH, U. S. Navy.

THE writer of this article does not propose to describe the maneuvers. Accompanying the paper is Admiral Higginson's Bulletin giving a summary of the movements of the fleet, and a sketch-map showing the approximate paths of the ships in the more important engagements.† The rules for the maneuvers were published in the Professional Notes of No. 103 of Proceedings of the Naval Institute.

There was, however, among the officers taking part afloat a consensus of opinion on various points that came up, which may prove of interest to readers of the Institute; and it shall be the endeavor of the writer to summarize these views to the extent that they became apparent to him.

The rules were criticized in a number of particulars by officers of both services. Prior to the maneuvers the two officers who had prepared the rules, under the direction of General MacArthur and Admiral Higginson, met the umpires and observers to talk over the subject and settle any doubtful points. At this conference the discussion turned about three principal questions. One was whether the life of the defensive works had not been somewhat underestimated, another was as to the course of procedure in the event of disputes of umpires in the few cases where under the rules decisions were required, and another was as to whether it was advisable to assign any values to gunfire and the life of ships and forts. The discussion was amicable, and of course it was too late to make any changes, but one of the officers present remarked that had the Lord's Prayer been up for discussion it would not have fared any better.

In regard to the questions mentioned, it is pertinent to state that they had been considered by the officers who formulated the rules. The War College staff had, unofficially, rather deprecated assigning values to gunfire or the life of ships and forts.

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† Omitted.

Their argument was that it would result in laying down all the moves on the game board and counting points, rather than in acting in accordance with judgment and as circumstances should dictate. This would have been in a sense objectionable; still any commander planning an attack would naturally count upon the opposing forces and estimate how long he would be under fire, and would endeavor to form in his mind some estimate of the damage to be expected. Also, one of the features of the maneuvers was that no units were to be declared out of action during any engagement, but for the sake of the training and experience were to continue through to the end, the Board of Arbitration deciding finally as to the outcome.

Hence some method was required by which a responsible commander could estimate approximately when to cease his fire on certain ships or batteries and then turn his attention to other units as they arrived in his field. Some such assignment of values would have to be made use of by the Board of Arbitration in arriving at their conclusions, and it seemed fair that if it was to be used at all it might as well be public to everybody.

One of the other questions related to the accuracy of the assigned values. No artificial rules could replace actuality. The most that could be done was to devise a method of approximating average values in these, the first combined maneuvers, and then to correct the values in the light of the experience gained. Quoting from an article by the writer in the New York Independent, the method was somewhat as follows: "A battleship was given arbitrarily a life of 1000 points. It was assumed that one or two 12-inch shells loaded with maximite and penetrating her vitals would put her out of action. Then from the accuracy of fire at different ranges and the angle of fall, the number of shots was estimated that would have to be fired to get two into the vitals of the ship. The quotient of 1000 by this number was the value of each shot of a 12-inch army gun at the stated range. And so for other guns and other ships than battleships. The points for the navy guns followed in this wise: At close ranges their accuracy is practically the same as for the corresponding army guns. At extreme ranges, owing to the instability of the gun platforms, and the circumstances that there are no accurate means supplied aboard ship of getting the range, as there are on shore, the percentage of hits will fall considerably below that of the army guns at the same range. This is not a criticism of the ship. Ships are meant to fight each

other at ranges close enough to produce results. Then the size of the vulnerable target, whether battery, or position-finder or searchlight, as affected by the angle of fall of the projectile, and as compared with the average target presented by a battleship and the damage done by one hit of a given caliber, determined the points to be assigned to each caliber for each range, and the life in points of each object fired at. It is to be understood that the points assigned the army and navy guns at the various ranges were in no sense a comparison of the guns themselves. The points had nothing to do with the relative power of the guns, but were the estimated effect of their fire in points *against the life of their own targets.* There was also established a rate of fire per minute supposed to be adequate to silence temporarily the batteries on shore and the exposed guns of the ships."

While on the subject of the rules it may be as well to indicate the changes which, in the opinion of the writer, the experience of the maneuvers showed to be desirable. It would be well to limit the effect of the lighter caliber fire to silencing only, and not to count it at all against the ultimate life of the various targets. Under the rules it counted against the life of ships and batteries when used in co-operation with higher calibers (Rule 59). It would be better not to count it at all except in silencing. The total points from a 6-pounder at 500 yards are 200 per minute, whereas from a 13-inch gun they are only 100 per minute. Hence a 6-pounder would have more effect against a defensive work, both firing together, than a 13-inch gun, an anomaly that may be corrected in the manner suggested; that is, count the 6-pounder only in silencing, the 13-inch gun both in silencing and destroying.

The searchlights and position-finder towers were found to be much more conspicuous than the rules seemed to contemplate, hence their life in points would apparently need to be diminished.

Some ambiguity seemed to exist as to the limits of phases in the various operations. As no ships or forts were to be ruled out during the maneuvers, the navy tacitly assumed that their whole force was available for any attack that might be made; whereas the army apparently assumed that certain ships had been destroyed in earlier phases and hence were negligible in later phases. It would be well hereafter to make the meaning perfectly clear in this regard and to adopt some readily understood signal to indicate the beginning of a new phase. Rule 57,

in reference to attacks on intrenched positions, contemplated shore operations only, and not landing parties supported by the fire of ships. The following sentences might be added: "In the case of an attack by a landing force supported by the fire of ships, the advantage in favor of the defense shall be reduced, or reversed, in such manner as the umpires may decide to be reasonable. In case of a failure to agree, the circumstances shall be referred to the Board of Arbitration."

It was suggested, and it is to be hoped that the suggestion was accepted, that the Board of Arbitration amend the rules in the light of all the various reports, and thus leave on record a basis to start with in case something similar has to be done in the future; in other words to thresh out something practicable by the trial and error method. One of our navy faults is to try nearly everything *ab ovo*, instead of gradually building up a method in particular cases that shall be in course of time at least partially self-working.

In arriving at any useful results in maneuvers of this kind, it must be borne in mind that they are games only, and are designed to bring out particular features of attack and defense. In the maneuvers in question, the object was primarily to afford practice to the personnel, secondarily to test the material in as far as the simulated conditions should permit. The character of the test was practically limited to discovering the target, determining its range and bearing, transmitting these to the gunners, and going through the motions of loading, pointing and firing. As such, the practice was eminently useful and satisfactory. The question of who won hardly enters at all. It was natural that some defects should have been brought to light, or at least made more prominent, and this feature in itself is a most valuable result of the maneuvers.

Some of the operations may now be taken up in order, and such comments made as may seem applicable. The first movement of the fleet was to secure a base from which attacks could easily be made on any part of the line of defense. Block Island proved convenient for this purpose. In actual war it would perhaps have proved useless and untenable. There is no shelter from the weather, and no possibility of defense against torpedo attack. As it was summer, and the army was not provided with any floating defense whatever, the position met the requirements of the occasion sufficiently well.

The first attack was a combined movement on Forts Michie

and Terry. The Brooklyn and Massachusetts led in in the evening, the Kearsarge, Alabama, Indiana, and Puritan coming up on the opposite side in the early morning. Of course, the question to be settled is as to the fate of the first two. They laid a course to pass between Little Gull Island and Valiant Rock, and had got into fairly close range before they were discovered. The searchlights did not seem to be of great assistance to the defense, as the beams were on the ships many times, fitfully; and when their final concentration showed that the ships were really made out, the range was pretty close, about 5000 yards. Had the ships been dull war color instead of glossy white, this distance would no doubt have been less. The course lay within 2700 yards of the batteries of Fort Michie, and the ships were some 15 minutes under the heaviest part of the fire. If they survived this punishment, their eventual position gave them command of the batteries in reverse. It is probable that there should be no reverse for batteries in such locations. In case of an attack in force, or at night, or in a fog, some of the ships would be reasonably certain to get through, though the others might be sunk, and once in rear, the batteries would be at their mercy.

The vertical base position-finder towers seemed exceedingly conspicuous. The light batteries of the ships were directed on these and on the searchlights, and must have disabled them early in the action. It is true that at such close ranges, direct sighting would have been used anyway, and the destruction of the towers would not have been of so great consequence. Still the towers are prominent marks at all ranges, and are good reference points for the batteries.

The ships coming up in the early morning were fairly close to Gardiner's Point before they were sighted. One of them ran on a contact mine and was put out of action. Two of the others were in the neighborhood of observation mines that were fired by judgment from shore, though it is not certain that both cross-range bearings were observed together. This mine field was a surprise to the ships. It was supposed that Plum Gut would be mined, but it is obvious that a line extending between Gardiner's Point and Great Gull Island will be equally effective, and though requiring more mines, it is not subject to strong tidal currents. After these ships had circled about for a while in the face of Fort Terry, while the Brooklyn and Massachusetts

established a cross fire from the other side, all the ships finally withdrew as they had approached.

Fort Rodman at New Bedford is not really in the strategic district of the attack. Still, to give practice to all the personnel, a division under Admiral Coghlan was sent to engage these batteries. Light vessels preceded the heavy ones to develop possible mines and obstructions, and the final attack was made at anchor. The Brooklyn in coming out struck an uncharted pinnacle rock in the middle of the main channel. The rock has since been located and buoyed. The accident points to the grave necessity of careful resurveys of many of our coast channels and harbors.

The other principal operations were day and night attacks on Fort Wright and on the Newport defenses. The day attack on Fort Wright began by the battleships coming up before dawn under cover of Mount Prospect—the hill on the point of land just to the eastward of the batteries—and in the dead angle of direct gunfire. They were within mortar range, but it is doubtful if the range stations covered that part of the approach. After they rounded Mount Prospect, it was a close cannonade on both sides all along the front of the batteries, through the Race, and up to the northward, taking the works in reverse. The tactics of the approach in this case was distinctly good. It probably got the ships through the mortar zone without damage. After that it was a contest of strength, ending at the Race. If the ships were still afloat, the victory was theirs, for the batteries were helpless to the westward. The same comment applies as in the case of Forts Michie and Terry; there ought not to be any reverse.

The night attack on Fort Wright was simply a run-past. The Brooklyn and Olympia went ahead to make a diversion, while the battleships endeavored to get into close range undiscovered. The fire of the leading ships was directed entirely at the searchlights and observation towers, to pave the way for the real attack. The cruisers were probably sacrificed. The battleships got within 5000 yards before they were discovered, and went through with a favoring tide at 15 knots over the ground. They probably got through successfully, as they were not more than 10 minutes under fire.

The last day was devoted to the Newport defenses. There was a general bombardment in the afternoon and a forced entrance at night. The main channel had been countermined by

the Peoria the previous night, as a cautionary measure, though, as it turned out, it had not been mined. The Peoria had been under fire for a short time while dragging the western channel, and had subsequently exploded her dummy countermines in the eastern channel without interference. Some question arose as to whether the two operations should be counted as a single phase, but the fact seems to be that her mission in the eastern channel was not recognized.

The bombardment was preceded by an attack on the signal and position-finder stations by the cruiser squadron. After this had proceeded for a reasonable time the Kearsarge and Alabama ran in near the Brenton Reef lightship, intending to gain a position in the dead angle of direct gunfire from all the forts. The exact position was not occupied, for though sufficient water is shown on the charts, it is not a fair way and there was a risk of running on unknown rocks. In their actual position the ships were under fire of most of the guns and mortars, though in a real war the risk would have been assumed of occupying the actual dead space, notwithstanding possible rocks.

Another division, consisting of the Massachusetts, Indiana and Puritan, came up from the eastward and occupied a position off Ochre Point, at anchor, some 800 yards from the shore. The exact range of the batteries was obtained from the bearings at anchor, and the guns were fired over the cliffs at the elevation required for the range. To get the direction, observers were sent aloft to locate the forts and indicate their bearing, as for instance over a certain gable roof, or over a certain chimney. The effect of the fire could not be observed, but the range and direction were known absolutely and it was reasonable to suppose that the shots would fall with fair accuracy. The cliffs and houses did not interfere, as the trajectories, with full charges, passed three or four times higher than any intervening objects. No return was made to this fire, as the guns of the forts did not train in the direction of the ships, and there were no range stations for the mortars. Some had been planned, but they were not connected. This part of the bombardment was no doubt the decisive feature. Even should it be granted that the damage to the batteries was inconsiderable, owing to the impossibility of observing the effect of the fire, one of the reasons for the existence of the forts was the defense of Newport, and Newport was at the mercy of the ships.

The night attack was spectacular rather than useful. It would have been next to impossible in time of war. It could not have been attempted had the channel been thoroughly mined and defended by controlled and automobile torpedoes and torpedo-boats. Under the existing conditions of din, smoke and searchlight glare it was a very pretty and creditable bit of navigation, and was carried through without mishap of any sort. The ships went through in column at distance at a speed of 9 knots, steamed around Gould Island, and went out in the same order. This maneuver would have required some skill and care even in the day time.

A few of the conclusions that have been arrived at, or confirmed, as a result of the maneuvers may now be mentioned. In the first place, the conditions were artificial, and were devised with a special end in view, as has been stated. It would be impossible to suppose that in actual war the army would not have the co-operation of a floating defense. It might be said that the maneuvers tested the *shore* defenses. The *coast* defenses, in the full sense, did not enter at all. The outer line of coast defense is the fleet. Were it powerful enough, no shore defenses would be required. So, were all the shores fortified to the point of impregnability, a navy, considered in relation to defense alone, would not be necessary. Neither of these procedures is possible, or desirable. But a compact, mobile fleet will keep an enemy at a distance from our shores, or at least prove a predominating menace in case he slips through. In such a contingency, the second line of floating defense, and the shore defenses, find the reason for their existence. They are to hold the enemy until the battle fleet can dispose of him. No success in war comes from merely resisting attacks. There must be the power to strike. Forts might resist an enemy forever and never defeat him. But at the proper moment the fleet may exterminate him.

So the inner line of floating defense and the fixed defenses work together. A mine field not patrolled may be swept, dragged and countermined in a fog. The heavy guns of the forts are the main reliance; but there should be light draft harbor defense vessels to lie on the shoals and harass the enemy; torpedo-boats to deter him by night, and submarine boats by day; searchlights to illuminate him; and position-finders to locate him and give his range to the gunners; submarine mine fields and batteries of automobile and controlled torpedoes to

prevent his entrannce; rapid-fire guns to cover the mine fields; and light vessels to patrol them: all these features in co-ordination constitute the perfect defense.

In our peaceful maneuvers an attempt was made to find the enemy by the use of searchlights. In most cases such use is apt to prove a positive disadvantage to the defense and a positive advantage to the enemy. Many nights' experience behind and in front of a searchlight have convinced the writer that under ordinary circumstances the mere flashing of the beams before the eyes of the observers gradually contracts their pupils until they cannot see as far, even on a bright moonlight night, as they can on an ordinary dark night without such questionable aids.

But if the lights are harmful in this way to the defense, in like degree they are an aid to the attack. They are a perfect lighthouse for the purposes of navigation. Moreover they reveal the condition of mind of the defense. If the lights are sweeping slowly and regularly, it indicates a feeling of security. But let any suspicious objects appear, instantly the lights are dancing in every direction. They then settle down for a period of investigation. If the result is satisfactory, they resume the slow sweeping. So, when you are picked up; they pass over you fitfully once or twice, then they settle on you for an instant, and perhaps pass on satisfied. Then you hurry on to the best of your ability; but when they have got you finally, there is no mistaking it. If they had not used the lights they might have had you some time before, and you would never have known their intentions until a sheet of flame told you the game had begun. So in a concerted attack, the admiral makes a feint preparatory to the real attack. If he finds everything is going well in the direction of the feint, he may follow with the main attack in the same line. Or he may decide that a favorable diversion has been created and then push home his attack in another direction. None of this would be indicated were the searchlights not used.

There is one exception to this reasoning. In case the enemy must cross certain fixed zones or sectors, and these zones or sectors may be covered by fixed beams of light originating from points quite remote from the observers, then the logical use of the lights is apparent. So used, they are a great help to the defense, and the attack has nothing to do but make the best of the circumstance.

The method of getting touch of an enemy who has eluded the outer line of defense will most certainly be by means of the scouts of the inner line. These small vessels will no doubt be equipped with some practicable system of wireless telegraphy, synchronized if possible and made proof against interference. After the receipt of whatever information may come from such a source, there will be nothing to do except keep a number of sharp-eyed observers, equipped with good night glasses, busily engaged scanning all the approaches, and the prospects of discovering the enemy's intentions will be as good as can be hoped for.

Searchlights is then a misnomer, as they should never be used in searching; but they are needed for illuminating the target in the interest of the gunners and range observers. Lights used for this purpose should be quite removed from the gunners and observers who depend on them. There are two reasons for this; first, the glare of the beams does not affect vision to such an extent; second, the reflected light seems better when it comes back at an angle with the original beam instead of in the same line, perhaps only through contrast. Some very comprehensive experiments made in Italy a dozen or more years ago determined that the maximum visual effect was obtained when the angle between the illuminating beam and the line of vision was 60° (from memory). This principle should be made use of in locating the illuminating lights. It is superfluous to add that all such lights should be effectually hooded on all sides except in the direction of the beam. The effect should be that of a bull's-eye dark lantern.

The term "blinding lights" has sometimes been used. The consensus of opinion afloat was that the blinding effect was of no consequence at the ranges that would be used in a bombardment. It is possible that in a torpedo-boat attack on ships the boats might be blinded at very close ranges, but at that point their work should be finished. The lights are used properly in this work only after the boats are discovered. The ships are best in darkness, leaving to the destroyers and vedettes the task of making known the approach of attacking boats. Some reports stated that the range observers ashore were occasionally blinded by the ships' lights, and recommended that the lights be directed on the range towers. This is probably desirable at least, there is no doubt of it, while the towers are under fire.

Perhaps later the lights are best used on the batteries, or whatever may be the target for the moment.

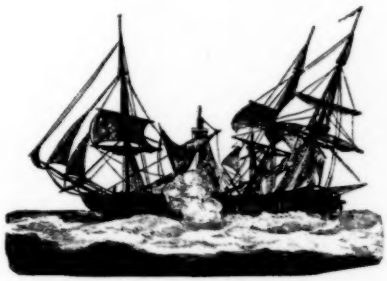
To the observer afloat the various adjuncts at most of the forts come into a very marked prominence. Searchlight stands and vertical base-position towers seemed to be the worst offenders. There were also buildings and barracks that showed plainly, and while they had no offensive value, a well informed enemy would use them as marks by which to sight his guns at emplacements otherwise concealed. The modern idea in fortification is concealment and dispersion as opposed to the old protection and concentration. It would seem that the sky line of our forts should be a perfectly unbroken line with nothing to claim the eye of the opposing marksman. In the neighborhood of foreign works, peaceful objects of prominence are often razed with no other motive in view. Such a policy would eliminate vertical bases except on sites sufficiently elevated not to require an additional tower.

Some discussion has taken place in the fleet as to the advisability of steering sinuous courses in a mere run-past. Of course in a bombardment it is well to keep moving. But in a run-past, the main point is to save time. If a sinuous course is steered, it is evident that the changes must occur at least as frequently as the predictions of the range observers, otherwise the prediction holds for the new course. Now, assuming a certain speed of predictions, and the ship maintaining a general advance, how much can she change her position from that predicted in one interval of predictions by any possible change of helm or speed? If the change is less than the error of the prediction, or of the markmanship at the given range, the attempt is entirely useless. It prolongs the time under fire and serves no useful purpose. The rest is a simple geometrical calculation, the data being given. With such data as the writer has been able to obtain, changes of course have nothing to recommend them.

During the period of the maneuvers the weather was persistently clear. In the absence of a floating defense, running the Race in a fog should be a perfectly practicable maneuver. It would most certainly have been attempted had the occasion arisen. The clear weather was of course to the advantage of the defense throughout, and the attack had nothing to do except make the most of it. The ships would have been much less conspicuous at all times had they been painted war color, and

this should be done in future maneuvers. In fact, in the opinion of the writer, it would be much better to keep them war color all the time. They are more impressive, look more like business, create a better moral effect, are ready to take part in any exercises or maneuvers or search problems, permit experiments as to the best color of paint, and last and more important than all, are ready for work at any moment their services may be needed.

These joint maneuvers may well be continued. The gain to the coast artillery is probably greater than it is to the navy. It gives them their only possible opportunity of service under something like war conditions, whereas the navy is mobilized and at work at something most of the time. It brings about an understanding, too, between the services. The interchange of observers ashore and afloat, as provided under the rules, cannot but bring about a mutual feeling of good will and respect. The writer saw a good deal of the army during and before the maneuvers, and realized, as we all should, that in any future difficulties, we have got to stand shoulder to shoulder, and the better we know each other the better we can do it.



DISPERSED ORDER AND INDIVIDUAL INITIATIVE IN LINE OF BATTLE WORK.

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(Retired.)

CERTAIN episodes in the South African war have induced professional soldiers to believe that tactical changes in methods of attack are necessary. The practical impossibility of driving home a frontal attack against any position, naturally or artificially strong, when adequately defended by sufficient numbers of good marksmen using long-range repeating rifles and smokeless powder, is very generally held to have been demonstrated. Indeed few soldiers would care to deny that smokeless powder, removing as it has done the veil of smoke which heretofore concealed the movements of the assailant at short range, has capped the climax of argument against frontal attacks and close formations within the danger zone.

There is nothing surprising in this except that it was not discovered at an earlier date. The lesson has been taught over and over again, and practically unheeded. Burnside's experience at Fredericksburg; Grant's at Cold Harbor; the Prussians at St. Privat, and the Russians at Plevna, taught it in terms that could hardly be misunderstood. And yet the astonishment so generally expressed when the same lesson was repeated in South Africa, as if something new had just been discovered, leads one to believe that previous experiences had been forgotten.

Of course the dangers are greater now than when the earlier lessons were given. Improvements in small arms and the use of smokeless powder have undoubtedly increased the dangers of frontal attack; but they did not create them. The lesson was proclaimed with as much emphasis in Burnside's attack on Marye's Heights as it has been in any incident in South Africa.

But the earlier lessons were not altogether unheeded. Something was done in several armies to solve the problem of attack in face of the long-range rifle; close formations inside

the danger zone were abandoned, dispersed order was adopted, and marksmanship was insisted on. These, it was believed, were a fair solution of the problem. They will be discussed later on.

But there is something to be considered in advance of the solution. Was the problem to be solved properly understood? Cautious commanders are supposed to count the cost of any desperate undertaking before ordering it. If they do, and the cost seems to be extravagant, are they to sacrifice their men or seek some other solution? They would hardly admit that the game was blocked.

And so the problem of attack presents a dilemma, but not a new one. It was presented in the cases already cited, and in each case the commander decided on the sacrifice, or, at any rate, to take the risk. There was an element in the problem which they overlooked. Was a frontal attack necessary? If it was, the consideration of cost was superfluous. If it was not; if there was any other less costly solution to the problem, the sacrifice was a great mistake, and, as it proved abortive, almost a crime.

The first thing to be considered, therefore, when a Commander, who knows the dangers of a frontal attack, finds himself up against a situation like any of those described, is, Can this be avoided? Is there any other way of dislodging the enemy? If there is, and it promises to be less costly, it should be adopted, even if its execution requires time, or calls for re-enforcements and additional transportation.

But governments dependent on popular whim, excited into momentary madness by a sensational press, are difficult to deal with. Ignorant of war as most civilians are, the people cannot brook delay. They believe that when the men are there the battle should begin. Sparring for an opening, as they consider all strategical movements to be, is evidence of fear in their estimation. Calling for re-enforcements is proof of incapacity. Are there not, they indignantly ask, twice as many men in the field as the enemy can muster? And what necessity can there be for so much transportation? Are they not already in contact with the hostile army? And have they not their supplies delivered direct from the railway trains? The Army is not handicapped in any way. Fear or incapacity must be causing the delay. The Commander needs the spur. And the Government thus spurred transmits its irritation

to the Commander in the field under the cloak of "Political necessity." And something regrettable is generally done. This is the attack in the rear, of which so many commanders have complained, and of which United States officers have had some experience.

In connection with the South African campaign much injustice has been done to British officers. Political necessity had too much to say. It demanded that the colony of Natal must be saved from further invasion; that Cape Colony should be cleared of hostile Boers, and that Kimberley, Mafeking and Ladysmith should be relieved at once. But the troops to accomplish all these undertakings were arriving only in driblets—rapidly indeed when distances and difficulties are considered, but still in driblets, which might have been destroyed in detail. In course of time these driblets were organized into armies, one of which was to prevent the further advance of the Boer Army into Natal, and the other to drive the hostile Boers out of Cape Colony and keep them north of the Orange River. Manifestly the military policy in South Africa during the earlier stages of the campaign was *wait*. Wait till all our troops have arrived; we shall need every one of them. Cape Colony must be watched, and every mile of railroad must be guarded. The Boers in the field are the least difficult part of the problem. They can march, and they can fight; but they cannot maneuver. In their chosen nests they are formidable. In the open they would be an easy prey. But to meet them even in the open we must have more transportation—three or four times the regulation allowance. Wagon trains will have to travel long distances over roadless territory. Then we must have large remount camps. Every trooper's horse must have its duplicate in reserve. All these things must have been known to the British commanders. None of them were known to that political power which men called "The Public." So, when men in sufficient numbers had arrived, an assumption which the public learned from the press, the mandate of the multitude was, Let the fighting begin.

And what did this premature mandate mean? It meant that the Boers were to be attacked in their chosen nests; it meant that the impracticable should be attempted. It meant the frontal attack of naturally or artificially strong positions, held by adequate numbers of excellent

marksmen using repeating rifles and smokeless powder. It meant that the assailants must advance against a hidden enemy without the old-time envelope of smoke. And experience had declared that it meant destruction.

Now such a situation should have called for consideration. The questions, is the frontal attack necessary? and is there any other less costly way of dislodging the enemy? should have been asked and answered before action was undertaken. And perhaps they were. Newspaper men cannot read the secret thoughts of anybody, nor penetrate the meaning of cipher dispatches. Of course the Government and the General knew. But the latter dare not publish official secrets, and the former will not advertise its own blunders. One feels certain, however, that a trained soldier would never have selected the frontal attack as first choice. He must have considered the alternative, and if he rejected it he must have had some reason for doing so. What could that reason have been? Why, because he had not sufficient transportation for extended maneuvers. He was tied to the railroad. And so something regrettable was done. And this applies to every British Army operating in South Africa during the earlier stages of the war. What seems military madness to the critics may have been Hobson's choice to the Commander. Strategy was barred and the Boers knew it. Cronje laughed at the idea that a British Army was trying to cut him off at Paardeberg. Cronje did not know that the arrival of transportation had let his adversary loose. But it had, and the days of defending strong positions against frontal attacks were over. Lord Roberts' march to Bloemfontein was practically a walk-over, so far as actual fighting was concerned. The Boers were maneuvered out of their nests just as the rebels were by General Sherman in his advance from Chattanooga to Atlanta.

As a military problem the study of the South African War should begin at the arrival of sufficient transportation, which happened to be coincident with the arrival of Lord Roberts. Previous to that the British commanders were tied to the railroads, and it is unfair to criticise them as if they were free.

But the South African War came to an end at last, and critics, competent and incompetent, began to operate upon it, some of them merely looking for blunders, and some trying to dissolve out the useful lessons it was supposed to teach. A

review of their work would require a volume. One shrinks from the task. But the cream of the criticism can be skimmed off, and some of the simplest lessons which they think it teaches can be discerned without much trouble.

Critics of all kinds seem to have been struck with admiration at the skill displayed by the Boers in taking cover, and the practical independence not only of Commandos but of individuals. First the Commando would select for itself the position to be occupied, then every individual in the Commando would select his own particular boulder, or other convenient cover, and hold it as long as he considered it safe to do so. Every one seemed to judge for himself, and when the proper moment arrived he moved without any orders from superiors.

No doubt it was surprising to see how an undisciplined crowd of men could act in such admirable harmony, when, practically, every man was his own commander. But it is not so very wonderful. A herd of deer will do the same. Indeed any wild animals which herd together will do it. Even schools of little fishes, when pursued by an enemy, exhibit similar harmony in their movements. Every individual in the school will turn in a new direction at the same moment of time, just as if they were disciplined and under command. The phenomenon is interesting whenever it is displayed. In South Africa it was fascinating, not only to newspaper men, but to experienced soldiers. The latter, however, must have discerned that the phenomenon indicated weakness as well as strength. In defensive operations and in retreat it worked very well. In aggressive operations it would have been impossible.

But it was observed and accepted at its face value. It was neither analyzed nor seriously examined. The instinct of the Boer seemed to be superior to the art of war, and some of the critics—one hopes not many military ones—accepted it as such. One need not be surprised, then, that some enthusiasts believed that it contained the solution of most of the puzzling problems created by improved arms and smokeless powder. Individual independence and the resulting dispersed order on the line of battle was the long-sought solution.

However ridiculous such tactics may seem to the experienced soldier, they have been gravely discussed in professional periodicals, apparently, by professional men. Together with

marksmanship, they are believed by their advocates to be the only rational training for soldiers of the future. But there are psychological questions so intimately connected with a soldier's duty in war time that any tactical system which ignores them must be defective. The deer-stalking, do-as-you-please tactics would be excellent if the army consisted of perfectly trained heroes, who knew exactly what to do under any conceivable set of circumstances. But such an army never existed, and probably never will. Small bodies of men, fighting for their lives against a savage foe, fight with the desperation of a rat in a corner. But as the line of battle lengthens, the opportunities of getting away increase on portions of the line and desperation yields to the instinct of self-preservation unless discipline holds the men to their duty. Control by example is sometimes talked of as a power on the battle-field, and when well mixed with discipline, and the fugleman is the commander, it certainly is. But under a deer-stalking system it would be the most timid man in the company that would act as fugleman. He would be the first to consider his position untenable, and therefore the first to leave. If there were a coward in the company he would be the bell-wether of the organization.

That the Boer tactics were effective in defense will not be disputed by anyone who has followed the progress of the war during its earlier stages. That they were ineffective in attack is admirably illustrated by the defense of Ladysmith, Kimberley and Mafeking. But a better, although less well known, illustration exists.

A small party of Australians and Rhodesians returning from detached service were marching across the country to rejoin the regiments to which the men belonged. The party was about five hundred strong in the aggregate, and as the men belonged to different regiments they were marching, no doubt, without any of those precautions deemed absolutely necessary in an enemy's country.

They had reached a ford on Eland's River, and found that further progress was barred by the Boers, 3,000 strong, and provided with artillery. In fact the party was surrounded before it knew it. And here one gets an admirable illustration of the effect of training in the school of experience. Without apparent hesitation the colonists resorted to Boer tactics. Every man of them selected or constructed shelter

for himself without command or supervision, and when the Boers' demand for surrender came it was answered unhesitatingly with a refusal. Then the battle began, and continued for fifteen days. Blackwood says "More shells were fired into that little place than into Mafeking," but the brave little garrison held its own. Several relieving columns had been driven off by the Boers, or deceived by false signal dispatches. At last Lord Kitchener found them out and released them.

That was a case where Boer tactics failed in attack. There were many such during the war; but cumulative evidence is unnecessary on the subject. Stubborn and successful defense was not exclusively a Boer characteristic. Brave men, with the advantages that modern rifles and smokeless powder afford, can make them under the most adverse circumstances.

Passing now from physical facts to psychological theories, one finds data for a strong argument against "Individualism in battle, and its resultant 'Dispersed order.'" One readily admits that example has great influence upon troops in battle, whether they are disciplined or not. But there are two kinds of influences—good and bad. The brave man's influence, especially if he is in command, is always good. That of the coward must be bad. Now if men were guided by their personal opinions, the most timid man in the line of battle would be the first to think that his position was untenable. And if individual action were permitted he would be the first to retire. In other words, the cowardliest man in the company would be fugleman.

Now under discipline the cowardly man has no influence in battle so long as "Silence in the ranks" is maintained. He recognizes his own timidity; but fancies that he is the only man in the company who feels that way, and not infrequently, after a few minutes under fire, the madness of desperation takes possession of him, and he will probably be considered the bravest man in his company. Without discipline, and with individual independence, that man would be worthless.

There are many such men in every company. The instincts of self-preservation are common to the race, but only a few understand that boldness is the best way to secure it. Commanders soon recognize such men. They are always modest. They take no delight in their bloody business, but act their parts from a sense of duty. They are heroes though unknown to fame, and fuglemen on whom a Captain can rely.

After much cogitation on the subject one feels satisfied that deer-stalking tactics are impracticable in line of battle work; that individual independence puts cowards in control; that battles won by direct attack are worse than defeat; that more mobility is the first step in the direction of a solution of all those problems arising out of modern improvements in arms and ammunition, and that assailants ought to be three times the numerical strength of defenders. It also seems clear that strategy should be rehabilitated; that enemies on the defensive should be maneuvered out of their strong positons, and that frontal attacks should be avoided.

THE SPRINGFIELD MAGAZINE RIFLE—MODEL 1902.

THE SPRINGFIELD MAGAZINE RIFLE, MODEL 1902.*

THIS gun is centrally fed by clips, as shown in the sectional drawing herewith.

The bolt has two lugs, instead of one, as in the old gun.

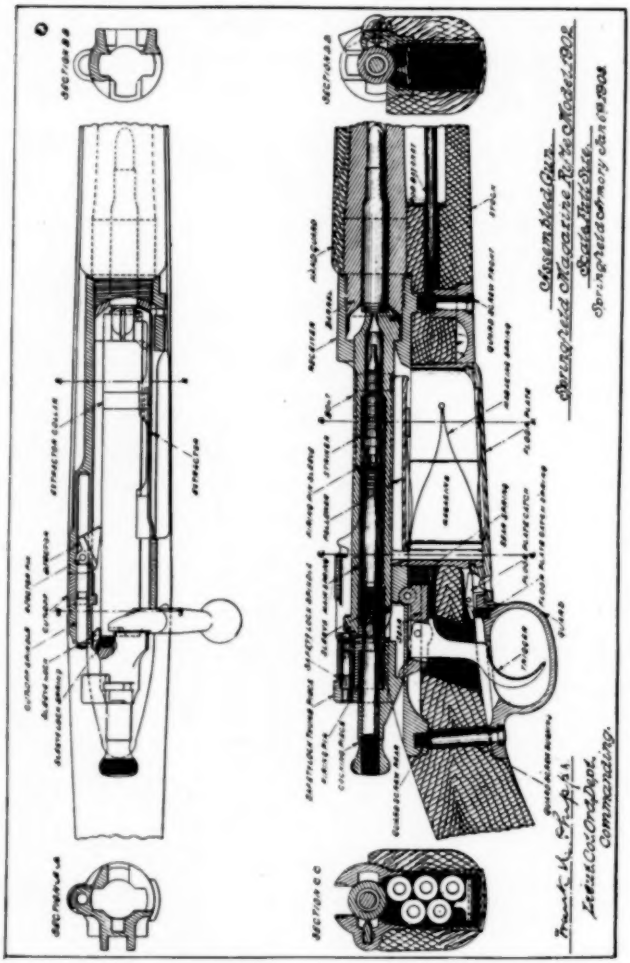
It is provided with a rod-bayonet, which also answers as a cleaning-rod.

Its caliber is 0″.30.
Number of grooves, 4.
Depth of grooves, 0″.004.
Weight of bullet, 220 grains.
Weight of powder charge, about 43.3 grains.
Initial velocity, 2,300 feet.
Velocity at 1,000 yards, 958 feet.
Muzzle energy, 2,581.6 foot pounds.
Striking energy at 1,000 yards, 447.9 foot pounds.
Penetration in white pine at 53 feet from muzzle, 54″.1.

COMPONENT PARTS OF SPRINGFIELD MAGAZINE RIFLE, MODEL 1902.

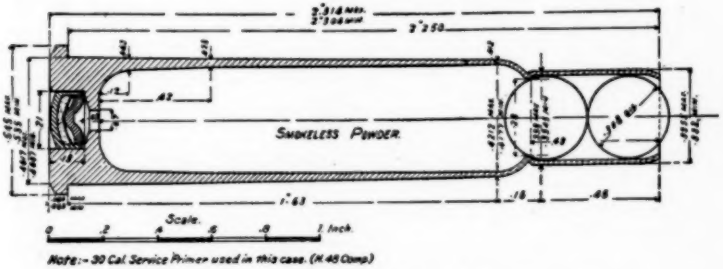
1	Barrel.	22	Extractor.
2	Bolt.	23	Extractor Collar.
3	Butt Plate.	24	Firing Pin.
4	Butt Plate Cap.	25	Firing Pin Sleeve.
5	Butt Plate Cap Pin.	26	Follower.
6	Butt Plate Cap Spring.	27	Front Sight.
7	Butt Plate Cap Screw	28	Front Sight Pin.
8	Butt Plate Screw—large.	29	Front Sight Stud.
9	Butt Plate Screw—small.	30	Front Sight Stud Pin.
10	Butt Swivel.	31	Guard Screw, Bushing Rear
11	Butt Swivel Pin.	32	Guard Screw, Front.
12	Butt Swivel Plate.	33	Guard Screw, Rear.
13	Butt Swivel Plate Screws, 2.	34	Hand Guard.
14	Cocking Piece.	35	Lower Band.
15	Cut Off.	36	Lower Band Spring.
16	Cut Off Spindle.	37	Lower Band Swivel.
17	Cut Off Spindle Screw.	38	Lower Band Swivel Screw.
18	Cut Off Spring.	39	Floor Plate.
19	Cut Off Spring Spindle.	40	Floor Plate Catch.
20	Ejector.	41	Floor Plate Catch Pin.
21	Ejector Pin.	42	Floor Plate Catch Spring.

*Through the kind permission of the Chief of Ordnance this JOURNAL is enabled to publish an illustrated description of the Springfield Magazine Rifle, Model 1902, which is now undergoing service tests; also a memo. relating to the Multi-ball cartridge, cal. 30, for short range use.—EDITOR.



SECTIONAL DRAWING—REDUCED TO ONE-THIRD ACTUAL SIZE.

43 Guard.
44 Magazine Spring.
45 Main Spring.
46 Base.
47 Base Pin.
48 Base Spring.
49 Eye Piece.
50 Eye Piece Knob.
51 Eye Piece Knob Pin.
52 Eye Piece Screw.
53 Joint Pin.
54 Leaf.
55 Slide.
56 Slide Pin.
57 Slide Screw.
58 Slide Spring.
59 Slide Spring Plunger.
60 Slide Shoe.
61 Receiver.
62 Rod Bayonet.
63 Rod Bayonet Catch.
64 Rod Bayonet Catch-Spring.
65 Rod Bayonet Stud.
66 Safety Lock Spindle.
67 Safety Lock Thumb Piece.
68 Sear.
69 Sear Joint Pin.
70 Sear Spring.
71 Sleeve.
72 Sleeve Lock.
73 Sleeve Lock Pin.
74 Sleeve Lock Spring.
75 Stacking Swivel.
76 Stacking Swivel Screw.
77 Stock.
78 Striker.
79 Trigger.
80 Trigger Pin.
81 Upper Band.
82 Cleaning Rod Head.



Note:- 30 Cal. Service Primer used in this case. (K 45 Comp.)

MULTI-BALL CARTRIDGE, CALIBER .30.

These cartridges are designed for use in cases where the great range of the service bullet would render its use objectionable on account of the danger to persons and property at considerable distances from the firing point.

The cartridge is composed of the service case charged with a full charge, about 34 grains, of smokeless powder, and two round balls held in the neck of the case by a cannelure at the lower end and a crimp at the upper. The balls are made of a mixture of lead and tin in the proportion of 16 to 1, and are slightly coated with paraffin. The diameter of the ball is 0.308 inch, and the weight 42 grains. The service primer for smokeless powder is used.

The cartridges have sufficient accuracy for effective use at 200 yards, at which range a slight elevation of 350 yards is required. At 100 yards or less, fire point-blank.

AN ELIZABETHAN ARMY.

AN ELIZABETHAN ARMY.*

By Lieut.-Colonel R. M. HOLDEN, Secretary,
Royal United Service Institution.

THE wood-cut, reproduced as a frontispiece to this Journal, is one of the best illustrations in existence of an English Army on the march in time of Queen Elizabeth. Some information in regard to an army of that period may perhaps interest members of the Institution. The original sketch appears in a rare work, "The Image of Ireland," which was written in 1578, and published in 1581 by one John Derrick, a follower of Sir Henry Sidney in his campaigns in Ireland.

Sir Henry Sidney, K.G., to whom the book is dedicated, was father of Sir Philip Sidney (author of the celebrated romance, "Arcadia"), and three times held the office of Lord-Deputy in Ireland: he was by far the ablest of the many able men who governed that country under Elizabeth. In those days a Lord-Deputy lived more like the general of an invading army in a hostile country than the Civil Governor of a peaceful and allied province; Sidney was continuously employed in either preventing or actively suppressing rebellion.

The long reign of Queen Elizabeth may, in one sense, be termed a peaceful one, but there was, nevertheless, a constant demand for troops either against the Scots, to put down repeated rebellion in Ireland, to assist the Huguenots or the "Hollanders," or to defend the kingdom against the threatened invasion of the Spaniards. At the commencement of the reign, such military forces as the country possessed were in any but a condition of efficiency, while the discipline was of the worst. There was no permanent armed force in the kingdom, and even the trained bands or Militia were no longer instructed in the use of arms, because the gentlemen no longer set the example. Troops were raised anyhow for an emergency, and, when the danger seemed past, the Queen, with her ruling passion—parsimony—promptly disbanded them. There is

* Col. Holden's sketch forms such a graceful introduction to the "Animadversions of Warre," which follows, that we have ventured to reprint it from the *Journal Royal United Service Institution.*

no doubt that England was behind all Europe in military efficiency, and this at a time when she was menaced by foreign enemies on all sides, and in perpetual peril of internal disorder. When apprehension of a Spanish invasion was constant, during the latter part of her reign, Elizabeth became more or less attentive to her internal forces, but, on the whole, it may be truly said that no monarch before or since has ever treated her army with more constant neglect than Queen Bess. Her great effort was in 1588, when the whole force in the kingdom for resisting the Spanish invasion amounted to about 135,000 men, formed into three armies: one at Tilbury, under the Earl of Leycester; another to resist the landing of the enemy and act as occasion required; and a third, under Lord Hunsdon, for the defense of Her Majesty's person. The Justices of the Peace of each county had been ordered, in conjunction with special commissioners, to muster the whole male population over sixteen years of age at the expense of the shire; and to register the residence and occupation of each, and the kind of service suited to them, whether carpenters, smiths, and so forth. The men were to be sorted in bands, so that there might be in each band at least one hundred footmen, forty arquebusiers, and twenty archers. Great care was ordered to be taken in the selection of the officers. In addition to the company organization, the force of each county appears to have been divided into regiments, or bands of 500, commanded by a "general captain," a term equivalent to Colonel, who also mustered the horsemen, 700 of whom attended each regiment. The arrangements then made were of great interest and importance; they were studied and repeated by our Ministers, who in the old French War had to provide against the threatened invasion of Napoleon. Had the enemy landed, it is doubtful what sort of a front our troops would have displayed against the veterans of Spain. Their spirit was, no doubt, good, but dishonesty was rife, and the muster-masters were corrupt. We know from Sir John Smythe, an old soldier of some repute, that the clothing and equipment was bad, and that the arms were in bad condition and out of date. The situation was, doubtless, rendered more difficult by the fact that the business of war was passing through transition, and the long bow and the bill, with their accompanying tactics, were becoming things of the past. Military training no longer consisted in friendly matches at the

archery butts. The old familiar instructors were cast aside for leaders from foreign schools, men who swaggered about in plumed hats and velvet doublets, and extravagant hose, swearing strange oaths of mingled blasphemy taught by Spanish Catholics and Lutheran landsknechts. Shakespeare was no mean observer of military matters; and, though it may provoke a smile, in his pages the student must look for the best history of the Elizabethan soldier.

The Army depicted in the illustration is one of those hastily brought together to quell one of the numerous rebellions in Ireland. The men were raised by the ordinary process of the times—the pressgangs, which were not over-scrupulous in their methods. On one occasion they took advantage of Easter Sunday to close all the church doors in London and take a thousand men from the various congregations. At other times the prison doors were opened and the gaols cleared, the sweepings of the nation being driven into the ranks.

The force, it will be observed, is preceded by an advance guard of five mounted men armed with lances or spears. In addition to the lance, which was from sixteen to eighteen feet in length, each trooper carried a sword, and a shield bearing the cross of St. George. The shield was slung on the back on the march, but in action was carried in front of the breast for protection. The trooper's uniform comprised a helmet or pot, tunic or cassock of broad-cloth and top boots. With the first introduction of fire-arms, the men-at-arms, or heavy cavalry, assumed most massive armor to ward off the effects of the arquebuse and pistol balls, but gradually the pieces were discarded one by one as useless encumbrances. The cavalry in the illustration wear armor on the body, arms and above the knees, but it will be seen that the horses, no longer in danger of wounds from arrows, were freed from their armor.

The infantry are headed by a party of arquebusiers, their arms consisting of arquebuse, sword and dagger. They also carried powder-flask, touch-box and bullet-bag. England was a long way behind foreign countries in the introduction of the arquebuse, and it was not until the year 1567, when the movements of Philip the Second gave the alarm of invasion, that we raised a corps of 4,000 arquebusiers.

Next to the arquebusiers march the pikemen, in their center being the flags, afterward called the colors, guarded by halberdiers. The pikemen wore helmet and armor for the

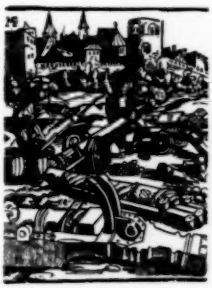
body and arms, and carried sword and dagger, in addition to a pike made of ash and measuring some fifteen feet in length without the iron or steel head. Halberdiers were soldiers told off to escort general officers, or guard the colors. They carried halberts with battle-ax heads, but in other respects differed very little from pikemen. Following the pikemen come more arquebusiers carrying calivers or light arquebuses, and sword, dagger, powder-flask and bullet bag. The caliver was a lighter kind of matchlock, between a musket and an arquebuse. Arquebuses, like pikes, were sloped on the shoulder, but there does not appear to have been at that time any very serious attempt at a manual exercise; the men stepped off with the right foot.

The Lord-Deputy Sidney rides on the left flank of the Army, preceded by trumpeters and standard, or guidon, bearers, and escorted by lancers, whose equipment has already been described. The music in an Elizabethan army was supplied by drums and fifes.

In her reign the army seems to have been clothed in various colors, according to the service on which it was employed. In 1566 the archers sent to Ireland from Liverpool were dressed in blue cassocks or coats, with two small gards or laces of blue. The Staffordshire men were in red; all the others in blue. Troops sent to Ireland the next year from Yorkshire wore light blue, with two small laces, red caps and buckskin jerkins. In 1569, arquebusiers raised at Salisbury also wore blue coats and red caps. In 1574 the soldiers wore blue coats, the artificers red, and in 1575 the Earl of Essex's troops for Ireland wore blue coats and motley coats. Artificers sent from Lancashire to Ireland in 1576 wore white coats with red and green laces. Next year the billmen and pikemen for Ireland had light blue coats and white stockings and venetians or breeches. The lacing was red or yellow. But these bright hues were evidently found too conspicuous for active service in Ireland, for some dark or sad color, such as russet, was recommended in its stead—a curious anticipation of our modern khâki.

On parade each company stood ten deep; companies being usually one hundred strong were thus square, a point which was considered of great importance. Both ranks and files had three different distances: (1) open order (six feet apart); (2) order (distance with elbows up); (3) close order, used by

the pikemen only. The evolutions were facing, wheeling, countermarching and doubling their ranks and files; increasing either the depth or breadth of the corps, or changing the situation of the ranks and files with respect to front and rear, and right and left. The maneuvers of the times were forming wings, wedges, rhombs, squares, triangles, the sheers, the saw and a variety of other whimsical figures. The pikes formed the center, the musqueteers, who acted as skirmishers, the flanks of each corps. Such is the information given in the military treatises which were written after Elizabeth had introduced captains skilled in the maneuvers practised in the Low Countries, to drill her Army. The highest military rank in an Army appears to have been that of Captain-General, after whom came the Lieutenant-General, the Judge or High Marshal, afterward Judge-Advocate and the Generals of Horse and Foot. The duties of Muster-Master correspond to those of an Adjutant.



NOTES ON FIELD DUTIES.

By Major JAMES PARKER, Assistant Adjutant-General U.S.A.

THE ATTACK BY AMBUSH.

A MANEUVER FOR SMALL BODIES OF TROOPS.

WHEN small bodies of troops are detached for the purpose of reconnoitering, foraging, etc., or reinforcing troops at the front, they are particularly exposed to the Attack by Ambush. We propose to illustrate it by example, employing a battalion of infantry.

The first company, which we will call the Browns, are in a wooded and broken country. They hear of the approach of a body of the Blues (the three remaining companies of the battalion), and undertake to ambush it. To make sure of the attack the Browns must be perfectly concealed; they must reserve their fire until the Blues have arrived within 100 yards; they must have a good position with a safe line of retreat, and their position should not admit of being easily flanked.

The Blues represent a reinforcement, hurrying by a forced march to the front, and by a fixed route known to both parties. They will try to frustrate any attempted surprise. Their scouts and flankers will, if possible, discover the position of the enemy without being seen themselves. Only in case an attack is imminent, will the scouts fire. They will watch for signs of the enemy (tracks, etc.), question inhabitants, and use every means of gaining information. These scouts should keep constantly in sight of their main body. The rear of the Blues should be protected by scouts, as well as the front and flanks. The point or leading group should be commanded by an officer or sergeant. In case of an attack they will take position quickly to repel it, and if possible to outflank and destroy the enemy.

In this exercise, to guard against accident, shots will not be exchanged at a less distance than 100 feet. No charging will be allowed. If the Blues are attacked by the Browns under cover, firing from a distance of 100 yards, before the

Blues can form up and take cover, they are defeated. Otherwise the attack is a failure.

At the conclusion of each attack the halt will be sounded and the movement will be discussed; ten minutes will then be allowed for the Browns to move on and take position again.

To make the example a success the use of blank cartridges in limited numbers, to be used by the Browns and the scouts of the Blues, is indispensable. The Blues should be required to attack often and at frequent intervals, the illustration of the failure of an attack being quite as instructive as a success.

The Blues to form up quickly from column of fours may adopt the following methods: To repel an attack on the head of the column, the Commander orders "Form for attack, march." The Captain of 1st Company, "Right front into line of skirmishers, battalion march." The Captain of 2d Company, "Left front into line of skirmishers, march, lie down, commence firing." The Captains of the 3d and 4th companies act as reserves, reinforce the line and protect or extend the flanks in their discretion, or make a flank attack. All men take cover at once. To repel an attack on the flank the command is, "Fours right march and form for attack, double time, march." The center companies to be in the attacking line or to break into line of skirmishers at once, all taking cover.

Different methods of conducting the ambush are:

1st. To so thoroughly control the force that it is passed by the scouts.

2d. To hide outside the range of the scouts until opposite the main body, then rush forward to a strong position near the enemy's flank or rear and pour in a hot fire before the line can be formed.

3d. To detach a portion of the Browns to attract the Blues' attention, to one side, and make the attack on the other.

CAMPING A REGIMENT OF INFANTRY.

TO MAKE CAMP WITH SHELTER TENTS. COLUMN OF COMPANIES.

The regiment being in line, the Colonel commands:

1. Stack. 2. Arms.

1. Right. 2. Face. 3. Forward. 4. Platoons. 5. Column right. 6. March. 7. Guide Left.

The Colonel adds:

1. Platoons. 2. Halt. 3. Left. 4. Face. 5. Right. 6. Backward. 7. Dress. 8. Front.

The platoons are halted when the rear file is eight paces from the stacks. They are then dressed backward, so that the left of each platoon shall be opposite the second stack from the right or left of the company stacks respectively, the right guides covering.

The Colonel then commands:

1. Prepare to pitch tents. 2. At 3 yards. 3. To the right take intervals. 4. March. 5. Platoons. 6. Halt. 7. Right. 8. Dress.

At the first command the 1st and 2d Sergeants take their places on the right of the 1st Platoon, the 2d Sergeant covering the 1st Sergeant; the 3d and 4th Sergeants on the right of the 2d Platoon; the Quartermaster Sergeant, Trumpeters and other file closers on the left of their respective platoons. All blank files being completed.

At the 8th command the ranks dress to the right, files covering from the head to the rear of the column, being assured in their positions by the Adjutant and Captains, the Captains then commanding front.

The Colonel then commands:

1. First Platoon. 2. About. 3. Face. 4. Front Rank. 5. Place. 6. Bayonet. 7. Pitch Tents.

At the 3d command the men of the front rank of each platoon draw their bayonets and stick them in the ground between their feet, edge to the right.

At the 7th command the front and rear rank men, working in pairs, unsling blanket rolls and erect their tents, front tent poles against the bayonets. Everything is then placed neatly in the tents and the tents inspected, the men standing at Attention opposite the right and left front tent pegs.

TO BREAK CAMP.

The arms being stacked, the Colonel commands the General to be sounded, at which the men strike tents, repack and put on their equipments and blanket rolls and fall-in in rear of the stacks.

ANIMADVERSIONS OF WARRE;

OR,

A MILITARIE *MAGAZINE* OF THE TRVEST RVLES, AND ABLEST INSTRVCTIONS, FOR THE MANAGING OF WARRE.

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OF THE MOST REFINED DISCIPLINE, AND Choice Experiments that theſe late *Netherlandiſh*, and *Swediſh* Warres have Produced.

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In two Bookes.

By ROBERT WARD, Gentleman and Commander.

LIPS. Pol. Lib. 5.

Nunquam bonos forteſq; milites habebis, niſi hæc duo, velut inſtrumenta adhibeas, delectum & diſciplinam.

LONDON,

Printed by *John Dawſon*, and are to be ſold by *Francis Egleſfield* at the ſigne of the Marigold in *Pauls* Church-yard. 1639.

I.

HOW TO PROVIDE IN PEACE FOR WARRE.

Chap. VI.

It is good in time of Peace, to provide for Warre.

HE that will goe to Sea, muft before-hand provide himfelfe of Bisket; and that Kingdome that cannot avoyd Warre, muft before-hand be provided of meanes to withftand it: for nothing can be more unfeafonable, than to be about provifion, at fuch a time as we fhould be in action. A wife State (like *Haniball*) will in profperitie provide for adverfitie, as well as in adverfitie, hope for profperitie; if they do otherwife, peradventure they may have their heads broken, before they take themfelves to their bucklers: As may appeare, by the example of *Katherine* Queene of Navarre, and *John* of Albert her Husband; whofe want of timely preparation, gave occafion to *Ferdinand* the Catholic King, not only to invade their Kingdome, but alfo after invafion, eafily to fubdue it. Had this Queene and her Husband, been in time provided, *Ferdinand* would eyther have defifted from enterprifing any thing againft them, or elfe he would have capitulated with them concerning a peace, in which they might have had the better conditions, being provided for warre: for the beft treating for peace, is with the fword in hand. Or if he would have been fo hardy, as to have given them battell, they being provided, fure might have expected farre better fucceffe than they found: but they were found unfurnifhed, and that was the loffe of their Kingdome. And the fame, may be the loffe of any other. For how hard and difficult will it be, for any Nation, to refift an Enemie invading, if they prevent not his arrivall by their provifions. People are difcouraged, by the fuddainneffe of danger, and rather ftudie how by flight to fhift for their particular fafetie, than by making head, to preferve their Countrie from the Enemie.

But, if any be fo vertuoufly minded as to make refiftance, how difficult will it be for them to draw together, in fuch a Kingdome as ours, where we have no fortified Townes, to

hold the enemy play? The enemie fhall no fooner heere of any affembly, but prefently he will be upon them with his horfe, to fever them before they can be able to make head againft him: unleffe they will fly to the utmost limits of the Kingdome, there to make up an Army in hafte, fuffering in the meanetime, the Enemie to enrich himfelfe with the fpoyle of the Country; and when fuch an Armie is compofed, what good can be expected from it, feeing it muft needs confift of raw, and untrained people, haftily gathered together, and altogether unskilfull in the ufe of Armies? When *Caesar* came againft *Pompey* the Great into Italy, *Pompey* and the Senate, being unable to make refiftance for want of timely provifion; they were glad to forfake, not onely the other parts of Italy, but Rome it felfe, and flye into Greece, before they could draw any competent numbers together, to give the Enemie Battell. Let *Pompeys* carelefneffe be condemned, and let wife Eftates imitate *Auguftus Caesar;* who at the firft brute of *Anthonies* ftirring, provided himfelfe, and croffed over from Brundufium, to give Warre the meeting; thinking it more fafe fo to doe, than to receive it within the limits and borders of his owne Italy: By thefe precedent relations, I hope any man may fee; *That it is good in time of Peace, to provide for Warre.*

CHAP. XI.

Of the provifion of Souldiers, and Land-forces.

As it is needfull for Iflanders and Maritime Countries, to maintaine *Shipping* and Marriners; So is it as needfull for them to maintaine Souldiers and *Land-forces;* which though they bee the laft refuge, yet are they the fafest and ftrongest defence, and muft wholly be relied on: For it is poffible that the enemy may overpower us at Sea, or he may by helpe of Windes and Miftes, or other advantages that may bee gotten, gaine footing on our fhore, though we have a more potent Navie than he on the Seas; and how fhall we deale with them on land if we maintaine not our *Land-forces* and Martiall difcipline? for which this Ifland hath beene very famous in times paft; Should we fuffer our fouldiery and the Art of Warre to decay amongft us, ten thoufand of the Enemies well trained, would foile forty thoufand of ours, that are not flefht, nor know the ufe of arms, were they never fo valiant:

For *Valour in the warres without skill, availeth but little:* As may appeare by the example of *Alexander* the Great; who with no more than 40 thoufand well-trained fouldiers (Macedonians) in the fields of Adraftia, overthrew fixe hundred thoufand Perfians, that were unfkilfull in the ufe of their Armes.

I would to God that notice might be taken hereof, and that greater care might be had of our Training than is; that they might no longer be ufed as matters of difport, and things of no moment; but as needfull for the training up of fouldiers, and enabling of men for the Warres, againft times of danger and hoftilitie; fo fhould our Prince and his Kingdomes, receive both honour and fecuritie: But as Trainings are now ufed, we fhall, I am fure, never be able to make one good fouldier; for our cuftome and ufe is now adayes, to caufe our Companies to meet on a certaine day, and by that time the Armies be all viwed, the Mufter-mafter hath had his pay (which is the chiefeft thing many times he looks after) it draws towards dinner time; and indeed Officers love their bellies fo well, as that they are loath to take too much paines about difciplining of their fouldiers, Wherefore, after a little careleffe hurrying over, of the Poftures, with which the Companies are nothing bettered, they make them change their Muskets, and fo prepare to give the Captaine a brave volley of shot at his entrance into his Inne; where having folaced themfelves a while after this brave fervice, every man repaires home; and that which is not well taught them (oh the fhame) is eafily forgotten before the next Training. Whereas, if we trained but twice in the yeare, and at each time kept the Companies together, but three or four dayes at the moft, they would be better acquainted with their Armes and the ufe of them; fo often practifing of them at one time, would make them remember what is fhewed, better the feven yeeres practice as now we goe to worke.

But, peradventure fome will thinke, that to keepe fouldiers fo long together at once, would damnifie the Country, by reafon of neglect of husbandry; But as farre as I conceive, it would rather be beneficiall to the Country; for now every Moneth in the Summer, they lofe a day by reafon of the Training, and the greater part of the Souldiers ufe to fall a drinking after the Training, and happily lofe the next day alfo; and fo in the Moneths of June, July and Auguft, which are bufie

times for Hay, and Harveft, they lofe three dayes or more; which is more damage to them, than eight dayes in May and September, for thefe are the two times in the yeare, wherein husbandmen have more leifure, than in any other of the Summer-Moneths; in May, becaufe all their feed is then in the ground, and no Hay nor Corne ready; in the latter end of September, becaufe Harveft and Hop-time, for the moft part is over, and wheat-feed not fully come; wherefore I thinke, with leffe damages, they might fpare foure dayes together in May, and fo many alfo in September, than to fpare in every of the Summer moneths but one.

We have other inconveniences alfo which attend our Trainings, and hindreth our breeding of Souldiers; for we appoint our meetings, commonly neare fome great Towne, as indeed it is meet for the reliefe of the Companies, but this inconvenience followeth thereon: when we are in the Field, many of our fouldiers (fo regardleffe are they of the Service) flip away, and are in the Innes and Tavernes tipling, when they fhould be exercifing in the field. And this is another caufe why divers of them are fo ignorant in the ufe of their Armes; hereby alfo they get an ill habit of drinking, which is the difgrace of our Nation and the loffe of many of our fouldiers, at fuch times as they are employed in forraigne fervice: As appeared in the taking of the Groyn, where by immoderate drinking, many of the fouldiers became fenfeleffe and unferviceable, being altogether careleffe both of their proper healthes, present danger, and imployment. By this inordinate drinking, the Plague was bred among them; and (which is worfe) the fword of the Enemie might have cut them off; had not the Generall, for redreffe hereof, caufed the head of all Wine-veffels, to be ftrucken out; according to a former prefident (upon the like occafion) in the conquest of *S. Domingo Jago, &c.* For prevention of which abufe, the Captaines muft either have more power to punifh, or if they have power enough already, they muft better put it in practice upon fuch malefactors, or we fhall never be able to make them Souldiers.

Secondly, we admit into our trained Bands, without judgement or difcretion, any that are offered, how unlikely, or uncapable foever they be of the *Art militarie;* yea, which is worfe, we fuffer them almoft every Training to alter their men and put in new ones, and how is it poffible, with our beft

skill and paines, to make fuch men fouldiers? *Mercuries* Image is not to bee made of every wood, nor every dull heavie fellow, to be made a *Mars* or man of Warre; care muft be had to correct this abufe alſo, if we will have able fouldiers to oppofe againſt an enemie. We muft therefore imitate the worthy Citizens of London, who in the Reigne of Queene *Elizabeth* chofe out of their feverall Companies, three thoufand of the moſt likely and active perſons, whom they appointed to be Pikemen and ſhot; Theſe that we admit into our trained Bands, muſt be likely and active; for every one that will be a fouldier muſt have theſe two qualities in him; *Likelineſſe* and *Ingenuitie* to conceive the uſe of his Armes, and then *Activitie* and *Abilitie* of body, to put it in practice.

Thirdly, ſome be admitted for their wealthes ſake, into Captainefhips, which neither have courage, skill nor delight in Armes themſelves, nor diſcretion to command others; but I hope of theſe not many, yet if any, it is too many; for how can we hope to make our people fouldiers, when they bee under blinde and ignorant guides; *If the Blinde lead the Blinde*, the iſſue (as our Saviour ſaith) will be: *Ambo in foveam cadunt:* We will not commit the teaching of our children to a Dunſe, and what reaſon is there we ſhould commit the leading of our fouldiers to ſuch a one? wherefore this muſt be remedied alſo, and I ſuppoſe it may eaſily be done by the honourable care of the Lord Lieutentant in every County; Had wee but all theſe abuſes well corrected, me thinke we might make our English trained Bands, paralell the beſt fouldiers in Europe.

Now becauſe in times of danger, it is requiſite that the trained fouldiers ſhould be drawne to the Coaſts to reſiſt the Enemies landing; it were fit that men ſhould provide themſelves double Armour, that we might alſo have an Army of the beſt men of the Kingdome, to guard the heart of the Land; and to keepe under diſ-affected perſons, if any ſuch be; which Army, as occaſion ſerved, might give ſuccour to the Trained Souldiers, in caſe they ſhould be in any danger; for it is not ſafe to hazard all upon the fortune and ſucceſſe of one Battell; as King *Harold* did (contrary to the advice of his brother *Girthe*) by meanes of which he was defeated, his people diſheartened, his Enemy Duke *William* animated; and finally thereupon followed his owne and his ſubjects confuſion; For upon his enemies marching forward after the Battell,

every man for his owne particular fafetie, reconciled himfelfe to the Conquerour; whereas, if there had beene an Army in the heart of the Land, to have feconded the other, it would both have bridled the Enemie, fuccoured the diftreffed Army, and have kept the Natives from revolting.

For the better compofing of fuch an Army, in the heart of the Land; it were well alfo if all our great Cities and Townes, would imitate the famous Cities of London, and Weftminfter: which have inftituted the two *Artillery yards,* for the training up of their ableft Citizens, in the ufe of their *Armes;* from whence not onely good fouldiers, but alfo many good Leaders and Officers might be drawne, for the conduction of our forces in the heart of the Kingdome.

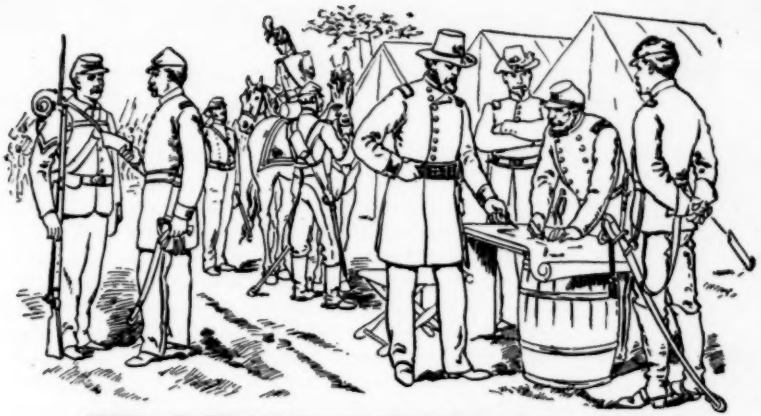
Furthermore, whereas divers Noblemen and Gentlemen keepe proper men to attend them; if they would but take care to have fuch Servants well inftructed in the ufe of *Armes,* both on Horfe-back and Foot, what exceeding profit and honour might redound to his Majefty and Kingdomes, if he fhould have any fuddaine imployments? And thofe Servants thus fouldier-like qualified, were as easily maintained and kept, and as fit for any other fervice, as thofe brave fwaggering fellowes; who had rather be like *Sardanapalus* among light women, than among Troopes of armed fouldiers: And truly fuch Noblemen and Gentlemen their bee in divers places, who to doe their Prince Service, are at great charges to keepe divers good and well-ridden Horfes, and divers Gentlemen with good furniture, to ferve both on Foot and Horfe-back.

Befides if every man, whether in the City or in the Country, which keepes Coaches for their owne eafe and reputation, would but have furniture for the riding and managing of fuch Horfes, what an increafe of ftrength would this bee in fuddaine danger?

Laftly, whereas, divers Gentlemen of the lower ranke, and rich Yeomen, keepe very good Teames of Horfes for their private ufe; if fuch would but have furniture for one of their principle Horfes, which when they had leifure, they might ride and manage for their recreation; this would make his Majefty, if occafion served, equall if not fuperior in Horse, to any Prince in Europe; neither would it bee any great charge to any man, onely the purchafe of the furniture, and armes, which once gotten, would laft to Generations.

We would eafily be perfuaded to thefe things, had we but as great a care for the generall fafety of the Kingdome, as we have for our owne particular fecurity; which of us is there, that is not at great cost and charges, for the provifion of ftrong Gates, doores, and lockes, without; and of ftrong Clofets and Chefts within, for the preferuation of our owne private wealth and fubftance; but what will this private care availe us, if we be negligent of the generall safety of the Kingdome? Should we by our fenfeleffe fecurity fuffer an enemy to picke the lockes that are to keepe him out of the Realme; What good would all our private Gates, Doores, Lockes, Clofets, and Chefts doe us, for the prefervation either of our Eftates or Lives? Wherefore, let us be perfuaded rather to refpect the common good in keeping out an Enemy, by provifion of Armes, and able fouldiers, than in looking to our owne private honour and fecurity, by building our houfes ftrong and ftately.

(TO BE CONTINUED.)



Comment and Criticism.

"The Armament of Field Artillery."*

Major James Chester, U. S. Artillery (Retired).

A superannuated officer, whose war experiences are confined to the campaigns and battles of our Civil War, cannot help feeling some embarrassment when invited to comment on an article discussing modern field guns. In spite of his war experiences, which covered the whole artillery field from Sea Coast Cannon to Horse Artillery, he feels rather out of his element as he approaches such a subject.

Lieutenant Stuart, in his interesting and suggestive article,† points out artillery difficulties undreamt of in the 60s, and finds a remedy for them in substituting guns of different calibre for those now in use. His reasoning is good throughout, and his conclusions are seemingly sound. And yet an old soldier finds some difficulty in adopting th m.

Lieutenant Stuart assumes the existence of a strong position adequately armed and occupied, and the necessity of hammering the occupant out of it. Thus provided with a problem and guided, or misguided, by the Drill Book, he recites the functions of Artillery in such an attack. He then, by sound reasoning, and some recent experiences in South Africa, discloses the dangers of the attack so far as the Artillery is concerned, and the practical impossibility of success with the guns now in use in our Army.

When one has carefully read Lieutenant Stuart's paper, and quietly admitted to himself the accuracy of his arguments, as to the

* The discussion on "The Armament of Field Artillery" will be continued in the JOURNAL for July.—ED.

† See JOURNAL, March 1903.

dangers of a frontal attack on a strong position such as has been described, the question naturally arises in his mind, Is there any other way of dislodging the enemy? Is there any necessity for a frontal attack? And here the principles of what might be called The Strategy of the Battle Field call for consideration. Battles and bloodshed are disagreeable incidents in campaigns and should always be avoided if the desired object can be otherwise obtained.

Of course an army on the offensive should always be twice as strong as its adversary, if not still stronger. Situations like that in South Africa, where every mile of railroad had to be guarded, and every peaceable farmer watched, would call for more troops. It is unnecessary to enter into argument on this point. Experience has established it as a fact. The defender has selected a position naturally strong, and has artificially strengthened it, perhaps, and armed it, and occupied it, and nothing would please him better than to be attacked in it. Now it is a maxim in war, Never to do as your enemy desires. If he occupies a practically impregnable position, turn the tables on him. The assailant, with half his force, can fortify and occupy as strong a position as he can find in front of the defender, and there make himself as secure and comfortable as possible, while the other half of his army is executing a widely-extended maneuver to turn the defender's flank, or threaten his communication. It was in this way that General Sherman worked his way from Chattanooga to Atlanta.

What would the defender do pending such operations? He must come out of his hole and attack the weakened force in front of him; or send a force to oppose the flanking column; or retreat. In any case the tables would be turned on him, for a retreat with an army on the flank is fully as dangerous as a frontal attack.

Nevertheless, the question of new guns for the Field Artillery is an important one. While it may be absurd to suppose that guns can be found capable of driving an invisible enemy out of his concealment, it would be equally absurd to send an army with inferior guns against an enemy of equal strength and superior armament.

It may be considered wise, one of these days, for an attacking force to use black powder. Concealment is almost as good as cover in front of marksmen with long-range rifles.

Major A. D. Schenck, Artillery Corps.

Lieut. Stuart in his discussion of this subject, after citing the Drill Regulations covering the attack and defense of positions, and a comparison of the new 3-inch with the old 3.20 gun, concludes with the question: "Has not the introduction of smokeless powder made the conditions of modern battlefields such as to require a more radical change in the armament of our field artillery than the one we are about to make?"

The answer, as a matter of course, is, Undoubtedly—provided always that our system of field artillery armament is to be confined to a single class of guns only, exclusive of mountain and siege guns. But, having secured the construction of a satisfactory modern light field 3-inch gun to replace the old 3.20 gun, the ordnance constructor will now take up the task of providing a modern gun to replace the old 3.60 heavy field gun, and also a "lighter" gun than the 3-inch for horse artillery; unless, indeed, the constructor and not a few artillery officers are still laboring under the spell of mental obliquity which seems to enable them to believe, or at least to accept as a fact, that it is possible to "Eat our cake and have it." That a light field gun can at one and the same time be heavy and powerful enough to meet the tactical requirements of a light field gun and also, by not carrying the cannoneers on the carriages, be light enough to meet the imperative requirements as to great mobility, required for efficient service with cavalry, often in long and rapid marches, or in still more rapid movements for very considerable distances when detached from the corps artillery to take part in the wide turning movements incident to modern battles.

At the beginning of the sixteenth century the calibre of field guns, even in individual armies, was very varied. Toward the middle of that century the guns of the French artillery were reduced to six, from ¾ to 33 pounders, the heavier for siege purposes and the lighter for the ordinary maneuvers with an army. In 1765 General Gribeauval reduced these to three, a 4 pounder for horse artillery, an 8 pounder for light, and a 12 pounder for heavy field or "position" services. There were also siege guns and howitzers of various kinds mixed with the guns. His system of light, medium and heavy field guns was so thoroughly tested and approved by Napoleon in his great wars, that it has been approved and adopted everywhere since his time. No systematic effort has been made to make a single gun that would serve the purposes of all the three, and every sporadic effort to construct a single gun that will prôperly serve the purposes of both a horse and a light field gun has uniformly resulted in failure; resulting in a hybrid gun with too little power for light field purposes, and insufficient mobility for horse artillery.

Lieut. Stuart is perfectly right in his contention for a lighter, and a heavier gun than the new 3-inch, in order to complete our field artillery armament proper, and he might have gone further and called for a siege gun lighter than the present 5-inch, having a measure of mobility better suited for service with an army in the field; having a lighter projectile which will admit of being carried in sufficient numbers without entailing an enormous and impracticable number of carriages in the trains. In these days we can transport 6, 7 or 8 inch guns to the site of sieges, without hauling them around with an army. It is true that the Boers took 6-inch

guns into the field, and might, possibly, have taken 7 or 8 inch guns if they had possessed them, but they never marched in campaigns even with their 4.7 inch guns.

The defensive position defined by the Lieutenant to illustrate the use of his proposed guns seems not only to admit of perfect cover for the enemy, but to be secure on both flanks. Like Spottsylvania, Cold Harbor, and Plevna it would be wiser to maneuver him out of it than to make a frontal attack on such a position. With a prospect of running up against such positions, it would be well to make a careful study of Uncle Billy Sherman's campaign from Chattanooga to Atlanta.

Almost any possible position of an enemy can readily and thoroughly be reconnoitered with the aid of balloons, failing other methods, and every important detail photographed if desired. An enemy who assumes the defensive has lost half the battle before it has begun, and if he acts as indicated he will allow the infantry aided by the artillery on the offensive to drive in all of his advance posts with ease. He cannot hold any position without fighting hard for it, no matter what kind of guns he may have nor how much he may desire to keep them concealed. His fight must begin at the longest range possible, as, being in a prepared position he has plenty of ammunition at hand. Otherwise he serves notice that he is practically in an impregnable position, and the assailant will choose some other form of attack than a frontal one: leaving the heavy guns (aided by siege guns if available), to assist in maintaining and defending the ground the defense has refused to contest with his artillery, the assailant will seek to turn the position assisted by the light field guns, the horse artillery operating with the cavalry on the extreme flank, or elsewhere as may be deemed best. As the assailant must have a preponderating force—in these days perhaps 2 to 1 or more, a defensive which will not bring into position his most powerful artillery to contest the advances to his position, will very soon be in condition to lose it to the enemy at small cost. If this defense has the superior force, he will, if wise, take the offensive.

The proposed 4-inch gun would be a famous one indeed for any artilleryman—if practicable as a light field gun. In the first place it would weigh 6,000 pounds or more behind the teams, and this, too, without a limber chest and ammunition therein, an indispensable requisite for any field gun properly so-called. It would be 1,000 pounds beyond the maximum load generally considered within the power of a 6-horse field artillery team, certainly so under the conditions of service in our country. On the other hand, it would be 1,200 pounds or more short of the powers of an 8-horse siege artillery team. A proper projectile for such a gun would weigh about 30 pounds, and without limber chests for the gun carriages, and with 2 caissons to a gun, which may be considered about the limit, and

suitable loads behind the teams, the number of rounds carried per gun would be only 132. Furthermore, if the so-called "rapid-fire" for field guns is ever to be actually used in battle to even a small extent, such an ammunition supply for a field gun proper is entirely inadmissible, and a 4-inch gun is out of the question.

As to the Maxim quick-fire one-pounder. It belongs to the large class of so-called "machine guns," and, in a field artillery sense, is not a "gun" at all. A field artillery gun, whether mountain, horse, light, heavy or siege gun, is one capable of firing a projectile having a time fuse; anything less than this at once passes to the class of machine guns, no matter what may be its design, and is not found as the regular equipment of field artillery batteries in any first-class service. The greatest value the modern field gun has is not at all in the ability to simply load and fire rapidly, but in the very great destructive power of shrapnel at extreme ranges, made possible by the use of telescopic sights, and the perfection with which the fuse is now constructed, and made very much more accurate in use, even with high velocities, on account of the much greater approximation to uniformity in the velocity of the projectile, due to its greatly increased spherical density as compared with former conditions. An effective shrapnel range of 6,500 yards is well within the limit of the modern fuse, and effective shell fire can be had at a 1,000 or more yards beyond this, even with a light horse artillery gun, which meanst hat oftentimes, instead of as old, having to limber up on a battlefield and drive at top speed to a new position, it is only necessary to increase the elevation, or change the front of a battery in position, to effectively reach a target miles away. It is useless to ask artillerymen to give up these, and many other equally obvious and valuable qualities in our guns, for a machine popgun firing a pound projectile without a time fuse, and with a praticable range of only 3,000 yards. A sharpshooter with a Colt automatic gun, cal. 30, provided with the old time sharpshooter-rifle telescopic sight suited to the necessary modern range, ought to be able to dispose of a pompom, its horses and man, in short order. He, with his assistant and pack-mule for ammunition, would be the "invisible" party, and not the pompom with its four horses, gun detachment and gun, which really has not much the advantage over the ordinary field gun in these days of first-class field glasses in the hands of officers and chiefs of pieces. The ability to fire rapidly is, no doubt, a valuable acquisition in any gun large or small, but any kind of fire, no matter how rapid, which does not ***hit*** is worse than useless.

There can be no doubt that machine guns have important uses, and may aid the infantry, and possibly the cavalry also, under battle conditions, but these are questions to be considered and applied by those arms of the service and not by field artillerymen. The latter has a well-defined sphere of operations, covering a large number of

very important conditions, to meet which he has a system of armament devised to meet in the best way all reasonable circumstances, which system embraces five classes of guns as the result of centuries of experience in war, and modern conditions have not affected the system in any way. It is just as necessary to have mountain or siege guns under certain circumstances, as it ever was, and the same applies with equal force as to horse, light and heavy field guns. The guns themselves have changed many times, just as have the infantryman's, but the system not at all. The infantryman increases his volume of fire by increasing the rapidity of fire; the artilleryman secured the same end first by the use of sectional shell and then with shrapnel; next by increasing the velocity and increasing the number, by the use of smaller bullets; then by increasing the weight of projectile and perfecting its construction; and last by increasing the rate of fire also. But his most valuable acquisition is the extreme range of his guns, the perfection of his fuses, and the telescopic sight which enables their accurate use.

The unchanging factor which enables us to bring any kind of a field gun into position on a battlefield is the *horse*, combined into artillery teams of 6 horses everywhere for field artillery purposes, and into teams of 8 or more for siege guns. The selection of guns for field artillery is not one of choice or fancy, but depends primarily upon the powers of the horse, the loads he can draw under given conditions. These loads are about 3,315, 4,500, 5,100, and 7,400 pounds, respectively, for horse, light, heavy, and siege artillery. With the older guns provision was made for carrying 3 men on the gun limber and 6 on the caisson, which made the net loads of the latter considerable less than for the gun carriages (in horse artillery the cannoneers are mounted on horses). If rapid fire is to obtain to any extent hereafter we will certainly require at least 2 caissons for each gun to insure an adequate supply of ammunition with a battery on the battlefield. With this number of caissons and the facility with which the gun is loaded from a caisson body close beside it, 3 cannoneers on each carriage will suffice. (Provision is made for carrying 5 men on the gun, but only in cases of emergency and for short distances.) Under this condition the net loads for gun-carriages and caissons will be alike in each kind of battery, which is very desirable. The average weight of a cannoneer and the clothes he wears being taken at 160 pounds, the net loads will be 3,315, 4,020, 4,620, and 7,400. The nominal siege gun team in this country is 8 horses, sometimes temporarily increased to 10, but the ammunition is carried on the heavy field gun caissons provided with suitable ammunition chests for the larger projectiles of the siege gun. As the cannoneers do not ride, but march beside the carriages in siege batteries, the maximum load which the team can pull, 5,100 pounds, less the weight of the caisson, consists of ammunition.

The actual weight of the material for the new 3-inch gun is unknown to the writer, except that it is stated by Lieutenant Stuart that the weight of one round is 20 pounds, the projectile weight being 15 pounds. This would indicate that the cost we have to pay for a "rapid-fire" we may never have occasion to use is exceedingly high, as every unnecessary pound of weight in a round of ammunition is "worth its weight in gold" and much more when it comes to war, and the efficiency of our batteries therein. As the weights of the limbers, caissons, etc., will not vary much from those now in service, and adhering to the loads behind the teams heretofore mentioned, we can arrive at very nearly what the service conditions of the new 3-inch gun should be, and also what should obtain for similar guns of the other classes, one "lighter," and the other "heavier" than the new 3-inch gun, to which is added the rough data for a siege gun.

FIELD ARTILLERY MATERIAL.		HORSE.	LIGHT.	HEAVY.	SIEGE
Calibre	in	2.52	3.04	3.56	4.21
Projectiles	lbs.	9	15	22.5	35
One round	"	12	20	30	48
Spherical density		4.50	4.25	4.00	3.75
No rounds per gun (see note below)		244	210	174	140
" caisson per gun		2	2	2	2
Gun and carriage	lbs.	1,863	2,138	2,516	....
Limber, complete	"	977	1,042	1,184	....
" ammunition	"	575	840	900	....
" rounds	No.	46	42	30	....
Caisson, complete	lbs.	2,125	2,331	2,468	2,468
" ammunition	"	1,190	1,689	2,152	3,354
" rounds	No.	99	84	72	70
Loads, without cannoneers	lbs.	3,315	4,020	4,620	7,400
" per horse	"	552	670	770	925
" max, cannoneers mounted	"	3,315	4,500	5,100	7,400
" max, per horse	"	552	750	850	925

NOTE.—The Divisional and Corps Artillery Ammunition Trains should carry an equal supply, giving 488, 420, 348 and 280 rounds per gun, either with the battery or close at hand.

The above is simply a rough determination of what we should have under the limiting conditions, but is no doubt a close approximation to what we will, no doubt in time, have as our complete field artillery armament, with the exception of a mountain gun, and perhaps also the siege gun, as a 5-inch gun has already been adopted, and a number constructed.

As with the present 3.60 heavy field gun we may possibly again expect the absurd complaint that a new gun of about the same weight is too heavy for the cannoneers to handle properly. If such there be, let those making it look up the weights for the old 12-pounders, light and heavy. For the former the gun and carriage weighed 2,409 pounds, and this gun was used during our Civil War as a horse artillery gun, but the cannoneers could handle it smartly

and never found any fault with the weight, except that when long and rapid marches were in order with the cavalry, it was decidedly too heavy for the horses, and 8 to a team were required to pull it through. Naturally this was the case, because the gun was constructed for a light field gun, with a load several hundred pounds too heavy for horse artillery. The weight of the heavy field 12-pounder, gun and carriage, was 2,986 pounds, which was about that found for similar guns in every service, but the cannoneers seem to have served such pieces efficiently without trouble or complaint. If our artillerymen cannot manage a weight 400 pounds less than this, there must be considerable deterioration below the standard of the old stock, or else the complaints were unfounded, which is probably the case.

For a horse artillery gun the track of the wheels should be reduced about 12 inches below that for our old guns, and made to follow the tracks of the near and off horses; the diameter of the wheels being reduced also, in order to insure the stability of the carriage. The reduced weight should be put into an increased ammunition supply, for if any field gun ever has an opportunity for real rapid fire it will be this one, especially during the rapidly fleeting minutes of cavalry actions. In such actions the pompom would, no doubt, be an efficient weapon also, but its weight of 2,700 pounds is too great to enable 4 horses to keep pace with cavalry in long and rapid marches. With 6 horses allowed, we at once demand the maximum power for the gun.

It is not understood what is meant by the assertion that "the adoption of the (his) heavier gun for the preparation, and the lighter gun for the support, involves the use of fewer guns for each duty, and the almost entire sacrifice of shrapnel fire." As shrapnel fire is the only fire an artilleryman depends upon in battle, and is constantly becoming more reliable and destructive, and at greater ranges year by year, any system which sacrifices this fire becomes worthless for field artillery purposes at once. The pompom has no fire of this kind and is ruled out at once so far as respects a claim to take place as a field artillery gun, irrespective of its lack of adequate range. A 4-inch gun will admit of a very powerful shrapnel fire, greatly superior to that of the heavy field gun above indicated, but its weight and resultant want of mobility rule it out of that class absolutely as a heavy field gun. On the other hand, if it be matched against the siege gun, to which class it properly belongs, it in turn is outclassed and must be rejected.

Lieutenant Stuart's claim that there must be in the armament of the field a gun heavier than the present 3-inch gun, and also a lighter than it; in other words, the light, medium, and heavy classes contemplated in the very drill regulations which he quoted and which have existed in quite perfect organization in every military

nation, including our own up to 1861, for more than a hundred years. In proposing a 4-inch gun he has nearly overshot the mark as to size and weight. But in proposing a machine gun instead of a true gun for the lighter, he has undoubtedly taken up an untenable position. It is well to remember that the promoters of machine guns have for many years been running to and fro over the face of the earth, advancing every preposterous claim imaginable as to the value and destructive powers of their weapons in battle. But as yet no great military power has displaced a regular field gun with a machine gun of any kind. This would be so perhaps if tactical reasons alone were duly considered, and the same result would certainly obtain if only ballistics were considered; both combined have closed the question.

We have taken up the "rapid-fire" fad as applied to true guns, but when a battery commander counts over the limited number of rounds with which his battery is supplied, 20 rounds, or even 10 per minute means little of value to him, and he will doubtless give his attention to hitting rather than to wasting his limited supply of ammunition for a very doubtful purpose. Rapid fire is much like the Texan's pistol, handy to have about, and when wanted, wanted —very much indeed, and though he may carry it a lifetime without ever having occasion to use it, he has it convenient to his hand should occasion arise. It must ever be remembered that the ability to *hit* stands far and away beyond anything else; without this supreme requisite rapid fire, or any other kind of fire has no value whatever. The ability to hit rapidly, aside from the loading and fuse cutting or setting, depends upon the time required to correctly aim the gun, and also in many, if not most, cases to correctly observe and locate the shot. These are the measures of possible rapidity of fire in very nearly all cases in battle, and not the ability to cut fuses anyhow, load and pull a trigger. What we want above all things is some method of "rapid aiming" correctly, especially at long ranges, and also the ability to correctly locate a shell or shrapnel burst. These conditions fulfilled, we will be in condition for pretty rapid firing and hitting at the same time, but to enable us to indulge this ability to even a limited extent we will have to be provided with a much greater ammunition supply than we are ever likely to get.

A field gun may properly be called a *rapid loading* gun, but we should abolish the term "rapid fire" from our vocabulary as applied to such a gun, and should eliminate it from our nomenclature and drill manual. The ability to fire 20 shots a minute has a wonderful good effect upon the artillerymen, and other soldiers too for that matter. But, except in very rare occasions, it will be a very dangerous proceeding to indulge that ability.

FORT SHERIDAN, ILL., March 13, 1903.

Captain William R. Hamilton, Artillery Corps.

Lieut. Stuart's article is timely and at present juncture of affairs in the world of military material, intensely interesting. There can be no doubt of the effectiveness of the one-pdr. gun under certain conditions, but there are few modern light artillerymen who are prepared to take it entire, in place of a heavier gun. If there are objections to the greater weight of the 3-in. gun, they must exist in a much increased form with respect to the use of guns of larger calibre, as the four-inch, while to give the 1-pdr. any weight in influencing the results of the artillery duel, over a 3-in. gun using fixed ammunition with smokeless powder, is, I think, very hazardous. The one condition of the modern battle-field that troops will not stand without cover of the most absolute form, is the discharge of shrapnel from guns well-laid. It is unheard of to find troops that ever have, or will charge a battery, which having the range, fires shrapnel. It is the only fire that terrifies the veteran as well as the recruit. Its use, so far from having become in the least obsolete, is but beginning to be well known. The 1-pdr. gun can not use an effective shrapnel, the 3-in. does. To be sure the 4-in. gun also uses a still more effective shrapnel, but since its use is on the defensive, the numbers of such guns must necessarily be small, else the entire armament of both offense and defense is made of up guns of the larger calibre. The effective range of the 1-pdr. is stated at about 3,000 yards, which is not beyond the power of well directed small-arms fire, when used against masses of troops.

The entire subject is one that should be deeply considered, and indeed has been for some years, by more advanced artillerists. A number of these to-day believe that but one weight of gun should be used with the army in the field and that should be of a calibre not so heavy as the 3-in., but yet greater than the 1-in., therefore possessing the power of the first, with the mobility and ease of concealment of the second. In large areas of unbroken and wild country, such as exists in South Africa, such a gun would possess great advantages for the offense, while in a well laid out garden, such as all Europe is known to be, the advantages are not so obvious.

FORT TERRY, N. Y., March 10, 1903.

"Long-Distance Riding."

Major John Bigelow, 9th Cavalry

Regarding Long Distance Riding, what we want in the service is not experiments but reports. Most of the hard marching that was done by our cavalry in the Civil War and in our Indian campaigns is almost barren of instruction—experience thrown away—for lack of detailed reports regarding gaits, weather, roads, halts, loads, forage,

previous training, breed of horse, training of rider, nature of saddle, etc., The art of husbanding the strength of a horse is very imperfectly understood in our army and perhaps in most armies. In fact, it cannot properly be called an art. It is regulated generally by guessing, tradition, and rule of thumb.

It might be developed into an art by the detailing of what might be called experimental troops to devote themselves to trying every typical condition and combination of conditions to be reckoned with in marching, and carefully recording and tabulating the results. This would, under any supposable system, be the work of years and ought never to come to an end. It would settle within practical limits the questions about which there is now no theory or no general agreement among our officers; for instance, as to the gait to be used under various conditions of distance, road, etc., the regulation of the halts, the best methods of hardening horses to marching and running; the best form and breed of horse in our markets, etc. As we get away from our Civil War we lose more and more of the ideas which its experience engendered. It is considered rather antiquated now, among our cavalry officers, to march at a walk throughout the day under any conditions. The single rein of the Civil War will not do for us until we have another big war perhaps.

So with the hooded stirrup and the plain rusty saber scabbard. So it may be with some of the tactical methods of the Civil War. You must remember, yourself, how natural and easy it was in Virginia, when danger was apprehended, to throw out a line of skirmishers from the head of a column and go ahead. Nowadays you are ruled out almost if you don't "Form advance guard" with front, flankers, etc. If you deploy in front of your enemy without sending out ground scouts, the umpire will get you—though the ground between your line and the enemy's is as open and flat and free from danger as the palm of your hand. If you take up a defensive position you must not on peril of your reputation fail to apply your "Security and Information." Outposts with sentinels to help the enemy find you out, and prevent his being ambushed are indispensable. But I am digressing. Perhaps, too, I am generalizing from too narrow observation.

FORT ROBINSON, NEB., March 10, 1903.

"The Education and Training of Army Officers."

Lieut.-Colonel James Regan, 9th U. S. Infantry.

Unquestionably a man should have sufficient intelligence to comprehend readily the theories and practices of his calling or profession, and particularly is this so of the military profession. My experience tells me, and the history of our country will demonstrate it, that the present standards to enter the Army from West

Point, the ranks, and civil life respectively, are with their competitive requirements sufficiently high. A higher standard might in the past have excluded some of our greatest generals, who have been so eminent in strategy and the masterly handling of armies in the field. Of course we do not want nonenities among our officers, no matter from which class they may have come. The foreign standards, while it may be necessary to study them, are not the standards to be followed by this country. They are unsuited to the genius of our people. We do not quite think as they do, our temperaments and activities differ quite radically.

The officers who come into the Army under present standards ought to be sent to schools of application to be grounded in the theory and practice of strategy, grand tactics and the minor operations of war, and upon graduation from such schools should be sent at once into the field, where they may experience the difficulties of the soldier's life, study their men, and get the most varied practice in the application of what they may have acquired at the schools. I have always thought that the star men of the classes at West Point, those to enter the Engineers, ought, instead of being sent to a post, to be placed in or attached to the big engineering enterprises of the country, such as the Brooklyn bridges, the subway, etc. In this way they would be quickly broadened, and not move along slowly upon mediocre works, however necessary. The young engineers, under undoubted experts, should have a year or two of such training. And so of the Artillery officers, who should be sent to our arsenals or civilian plants where our large guns and shells are manufactured.

There should be only three ways for officers to enter the Regular Army, *i. e.*—West Point, the ranks, and from the Volunteers after a war. Civilians, other than volunteers, should be required to enlist, serve two years, and compete before receiving their commissions. It is hard for a young man who has served honorably, efficiently, and perhaps hardened by campaigns and battles, to find himself ranked by such men, however worthy.

"The Lack of Small-Arms Experts and Interest in the Rifle."

Captain H. E. Ely, 26th U. S. Infantry.

"Lack of Small-Arms Experts," is certainly a very timely article as a whole, just now, when the majority of officers of the Army have had little or no experience with small arms firing; but some of the statements made in the article are inaccurate and misleading, and a wrong deduction might readily be drawn from them. Because "A Service journal, some time ago, complained bitterly because a National Guard man has written advocating an increase

in the annual allowance of ammunition for target practice," the conclusion is drawn that there is an apathy and lack of interest in the Service. The conclusion is erroneous, also the statement that there is a lack of small-arms experts; if the writer had attended the Department and Army competitions from '90 to '94 he would have seen many experts. At the Army competition at Fort Sheridan, Ill., in 1894, out of, I believe, 35 competitors, there were 10 officers, and this is only indicative of the relative shooting ability of the officers and men. The scores made in known distance and skirmish firing, combined, were excellent. In 1893 the Army team beat all the National Guard teams brought against it, some six selected ones. Teams might be selected from civilians or possibly N. Gs. from all over the country that might beat the Army team at known distance, but they cannot at the combined firing, and the skirmish firing is the truest test of actual ability. All these officers are still in the service, except "Jack" Gregg, who was killed in battle.

The reason the expert is not now in evidence is merely temporary, *i. e.*, change of rifle in 1895 combined with abolition of participation by officers in competitions, and immediately after, the outbreak of war, with movement and constant change of troops incident thereto. Now that troops are to have stations for two or more years at a time, and inspections and competitions are resumed, the experts will appear again.

I do not believe all company officers can become "experts" in the sense of being able to teach and train their men to accurate shooting. When an officer finds he cannot shoot well himself, due to defect of vision or nerves or that extreme attention to detail required, the best he can do is to learn all the theoretical parts and let some other company officer or sergeant who can shoot, attend, under him, to the practical details.

Among the officers who have come into the Army in the last three years or so there is probably a lack of knowledge, but I do not think a lack of interest—having the interest the knowledge is soon acquired. No officer with any regard for his military standing cares to have an inspector requesting explanations as to why his company is the poorest in the regiment or post. I believe that to have the Regimental Commander enter on each officer's efficiency report his classification in marksmanship, as is done on a soldier's discharge, might furnish a little incentive to the company officers, especially the younger ones, to study and practice.

However, it should be remembered that a good eye, a steady nerve and extreme care are required to be a good shot, and no matter how conscientious an officer may be in study and practice, all cannot be good shots.

That men soon derive enthusiasm from their officer I know; as many men of my old company (E, of the 22d Inf.), gave up coffee

of their own initiative in 1894, thinking it affected their nerves and prevented good shooting, and the company went from about 170th place to 2d place in the Army that year.

That expert knowledge is not expected or demanded, is a mistaken idea, as a perusal of some of the inspection reports will show where several officers have been called upon to explain the poor showing of their organization.

Nor is there "default of a valuable, authoritative, exhaustive work on small arms;" the latest edition of the official Firing Regulations—practically that of Major Stanhope E. Blunt, one of the best shots in the United States—fills the bill; the "sporting papers" are worth less as sources of the information required. If one wants more information than that in Firing Regulations, he can study Ordnance and get it; or, if he wants information on some particular point a letter to Ordnance Department would undoubtedly receive a full, concise, intelligent answer; better than any sporting paper or amateur writer could give. Fortunately it is not the practice of the War Department publications to "pad up" with incidents and stories to make a work interesting; they are for information, and they give it concisely and clearly, and any officer who knows his Ordnance and Regulations, as all are supposed to, can answer any of the "101 questions continually arising in the mind of the intelligent American soldier."

It is indeed true that by "proper preliminary training, errors are minimized from the start," and a more careful reading of the Firing Regulations will show that such training is strictly required. By following these Regulations, with liberal use of gallery ammunition, any officer can tell almost what his men can do before he ever goes on the range, and waste of ammunition is inexcusable.

I have read several "private works" on small arms and rifle shooting, but none of them can compare favorably with the Govenrment works for conciseness and clearness; figures are dry, but figures count; and facts, not "interest," are what is wanted. When we want stories we go to a novel, but when we want information we go where it is most reliable and concise.

Captain Low is mistaken when he says "Nor, indeed, are all the dry tables that it contains even accurate, as in the one where the deviations for the bullet for all ranges are given as to the left, when it is well known that at a certain point the 'drift' passes from left to right, etc."

The "drift" is in the same direction from start to finish, depending on the direction of twist of the rifling; Captain Low probably fell into the error that "the 'drift' passed from left to right" because in some issues of the rifle the "drift" is corrected for a certain distance, as 500 yards, by the adjustment of the sights making it necessary to take windage or distance to one side, under 500 yards, and to the other above 500 yards.

If the "private work on small arms" led to this error it had best be thrown in the waste-basket.

As to the conclusions, the measures suggested have been already provided for. Boards of "experts" have modified the Firing Regulations every few years; and even now a Board is about to report, authorizing officers to compete in competitions; making a class of expert riflemen, with increased pay; prescribing supplemental practice for recruits; increasing the allowance of ammunition, etc.

Finally, we have, I fully believe, everything required. We have the "experts" as will soon be shown; we are to have more ammunition; the practice season is supplemented; inspectors are making careful reports; the present sources of information and Regulations are far better than any story books on the subject, and two years from now, owing to steps already taken, as well as again being in permanent stations, I fully expect to see the best records ever made in the U. S. Army, or any other army. We need a few improvements on our rifle, but that too is being looked after.

"The Moral Training of the Soldier."

Major John Bigelow, 9th Cavalry.

I read the article of Major Bullard and the comments thereon with great interest. As between the two I side with the Major. Whether soldiers enlist from sentiment or for lucre, they must have sentiment to be good for much. It is as true now as when Napoleon uttered it, that in war the moral is to the physical as 3 to 1. The comments are sufficient evidence, if any were needed, that the first condition to the moral training of the soldier is the training of the officer in the art of imparting moral training to the soldier. The Major's critics generally confess, between the lines, that they do not know how, and would not trust other officers to make anything but a failure of an attempt to train the moral side of the soldier. The training should therefore begin with the officers. It is assumed that the officer appreciates the value of character, military spirit, *morale*, in the soldier—although there are reasons to doubt his invariably doing so. Who that has ever been at West Point has not been asked as a Plebe: "Say, mister, are you fired with military ardor?" and given to understand that he would have all such nonsense taken out of him. Only a few days ago was the birthday of the greatest man, greatest soldier, greatest patriot, that this country has produced. It fell on a Sunday. There was no notice taken of it. This hero of humanity was not referred to in any order, circular, or official publication. No special holiday was taken. Such was the case at my post, and I believe at most posts in the country. Could this happen if the officers of the Army were not themselves deficient in the spirit

which they should impart to, and develop in, our soldiers. If it were evidence only of lack of sentiment, but it shows of a more serious fault, a disregard of orders which is utterly inconsistent with discipline worthy of the name—the absence of the most rudimentary conception of obedience, the foundation of military spirit. G. O. 125, S. 1900, Headqrs. of the Army, says: "The national holidays will be celebrated with appropriate ceremonies, including the reading of the Declaration of Independence, Washington's Farewell Address, or the Constitution of the United States, and such other exercises as will tend to promote respect and reverence for the institutions of our country." In my experience of over a quarter of a century, as an officer, I have never heard any part of any of the forementioned documents read to the troops constituting the garrison of an army post. Only a year or two ago I could not get the use of the target range for a few hours to rehearse a programme of exercises with which to celebrate the 4th of July.

The training of the officers requires that more attention be given to biography. I say more attention. I believe, however, that none is given to it now. With a view to the training of the soldier, I should advocate at least one hour a month to be taken from the time now devoted to drill, for theoretical instruction. Let the troop commander talk off-hand, lecture, comment, read, or ask and answer questions, do anything to get at the souls of his men, and show that he recognizes that they have souls. For the rest, the moral training of the soldier must be effected indirectly, by the examples of his officers, and the spirit which accompanies the orders and instructions which he receives and carries out. It is not good moral training for the soldier to be looked over at guardmounting as if he consisted of a carbine and a suit of clothes, and selected or turned down as orderly without any regard to his aptitude at understanding a message, or his faculty for carrying it expeditiously and delivering it correctly; nor to be told off from the head of a column as "front" or flanker because he happens to be in the leading set of 4's without regard to his qualifications to observe and report; nor for a man to be rated as a shot without regard to his ability to estimate distance; or to be made to carry a saber and keep it polished and not learn how to fence with it; or to see officers wearing ununiform clothing in garrison. Innumerable other influences prejudicial to *morale*, might be cited, which if abolished would contribute to the moral training of the soldier. For positive development of *morale* there is nothing like rational training in strictly military exercises, ending in field exercises on as large a scale as possible. The common soldier realizes and suffers in spirit from the fact that our troops (companies) are drilled into the ground, our squadrons (battalions) drill fairly well, and our regiments don't drill worth a cent.

FORT ROBINSON, NEB., March 10, 1903.

"The Selection of National Guard Officers."

Major O. H. Hitchcock, 1st Infantry, N. G., N. Y.

Referring to the article by Lieut. John F. O'Ryan, in the March number of the JOURNAL, I have the honor to enclose to you herewith a paper, written by myself, upon the same subject, which outlines a different and, it seems to me, a preferable scheme. Both the schemes outlined in Lieutenant O'Ryan's article and mine have failed of materialization for the present. A campaign of education is, however, beginning which will, doubtless, result in some legislation in the State of New York germane to the subject.

* * * * * *

"The matter of the abolition of elections for the choice of commissioned officers in the National Guard of this State, and the adoption of a more logical system, has been frequently discussed; and it has been considered that the time may have come when such a change might be made without endangering the interests of the service, provided only some scheme could be proposed of a practicable nature which would be acceptable to the State force.

"The evils of an elective system of choosing commissioned officers are so many and so great that it is curious that such a system could ever have crept into any military organization. The reason, however, is not difficult to find. The National Guard, as it exists to-day, is not in any important sense the successor of the old time militia of the United States statutes or of the State law, as it existed up to the adoption of the Constitution of 1821. Early in the last century there began to be organized voluntary military associations, the so-called "rifle companies," the members of which not only armed and uniformed themselves, but did very much more in the way of drill than was required by law of the militia proper. While the officers of the militia were all appointed by the Governor, the rifle companies claimed and were accorded many privileges, among which was the right to choose who should command them. Troops of cavalry and companies of artillery were organized on the same basis. When the militia proper were finally laughed off the stage, the voluntary associations survived; and the National Guard, as it exists to-day, is their legitimate successor. * * *

"The worst of these evils is, without doubt, the elective system of selecting officers. It is an anomaly in any military body, and opposed to the first principles of discipline. An election in an organization makes discussions of the relative merits and demerits of superiors by their subordinates inevitable. Not only do enlisted men discuss among themselves the character and fitness of their officers, but, far worse than that, it is practically impossible notwithstanding regulations, to avoid such discussions of others between officers and enlisted men. It is difficult to imagine a situation more radically opposed to discipline than that which inevitably arises from these causes under these conditions.

"For the same reasons harmony and good feeling are often strangers to many organizations; and, when they do exist, rest upon an insecure foundation. There are many company organizations which are almost disrupted by pending elections, or by the results following an election. In every company there is usually a minority which is opposed to the administration, and which

bears the restraints of authority with difficulty. In case a vacancy occurs among the commissioned officers, this element will find a representative candidate; and, by the use of all the arts known to the politician wire-puller, will endeavor to secure his election. If successful, a discordant element will be introduced among the commissioned officers, to be a fruitful source of trouble and difficulty, often extending over a period of years. * * *

"The sole alternative, if the elective system were abandoned, is the adoption of a system of appointment. This system also has its difficulties, which are not to be underrated, but which it is believed are not insurmountable. The Legislature has the power, under the Constitution, to pass the laws necessary for the purpose by a two-thirds vote; and would undoubtedly pass any such law that would meet with the general approval of the National Guard and those in command in it. The sanction and approval of the Guard to any proposed scheme is, therefore, an indispensable prerequisite. It goes without saying, that merit and fitness must be the basis of any system of appointment, and that political and social influence must be wholly eliminated. Inasmuch as the proposition involves the taking away of rights upon which, in some cases, a high value is placed, some compensatory advantage must be offered; and the scheme must afford reasonable assurance that it will result in the choice of better officers.

"Our past and present experience of the appointive system, so far as we have had experience of it, affords much encouragement; and is our best guide for further measures in the same direction. The Major-General commanding, and all staff officers, are now appointed. Brigadier-Generals may be appointed at the option of the Governor; and a law wholly doing away with their election, and with the election of field officers, would probably encounter but little opposition. The real difficulty is encountered when the proposition to appoint company, troop and battery officers is met.

"Yet may not the difficulty, even here, be largely imaginary? Signal Corps officers are all appointed, and we hear nothing of discontent or opposition to the system among the enlisted men in their ranks. Within the recollection of the writer all company non-commissioned officers, from First Sergeant down to Eighth Corporal, were elected. In 1883, by an amendment to the law, First Sergeants and Quartermaster Sergeants were made appointive offices. No dissatisfaction followed; and the results of the change were of the most satisfactory character. * * * In 1888 all the remaining non-commissioned offices were made appointive. It is the universal experience that then for the first time we began to have more than a semblance of discipline, and non-commissioned officers who were really good for something. The offices were enhanced in dignity and value by the change. Sergeants and Corporals were given real authority which emanated from the proper source—above, not below. * * *

"Approaching the problem, then, in the light of past experience, it would seem to be manifest that, while the appointing power must be the Governor as Commander-in-Chief, the nomination for appointment should be vested in the person best qualified to make the most eligible selection, and who is most interested in securing the best results for the good of the service. In other words, the nomination of regimental commanders should be vested

in the brigade commander; of field officers and captains in the regimental commanders, and of lieutenants in the line with the captains. If, for any reason, the necessary knowledge of their subordinates might be lacking in the nominating officer, they have every facility for inquiry and investigation, and every motive for making the best possible choice. Seniority, length of service, knowledge and practical ability to command, could all be taken into consideration, and given due weight. All nominations and appointments should, of course, be made from persons eligible by law and subject to examination.

"It is believed that it would aid very materially to make an appointive system acceptable, and make its practical application easy, if a class or grade of enlisted men were established known as candidates for promotion. This would in large part meet the serious difficulty that might otherwise exist in determining the relative merits of enlisted men for commissioned office; and would afford a powerful incentive to the men. Such candidates should be assured by proper regulations of promotion in case of vacancy in preference to other enlisted men or civilians.

"The writer realizes that even such a scheme as the above would encounter serious opposition from some organizations, growing out of ancient traditions; or in other cases because, being better fitted than others to govern themselves wisely and intelligently they are not sensible of the evils of the present system, or convinced of the advantages for them in a change. Any proposition for a sweeping change of this nature, if made compulsory would probably meet with sufficient opposition to secure its defeat. Here, however, past experience and precedent may aid to point out a course at once simple and feasible, which would in all probability insure the desired result. * * *

"The present time would seem to be in many respects favorable for such an innovation. Most of our officers, and a rapidly decreasing number of enlisted men, have had practical experience in volunteer organizations of true military discipline and organization founded on correct principles; and should be, and doubtless are, profoundly conscious of the limitations and shortcomings imposed upon the service by the elective system. We have now a thoroughly established permanent organization, wholly divorced from politics, and solely concerned to secure the best and most practical results. During the past few years the National Guard has made substantial progress toward real excellence. The burdens of duty and responsibility laid upon its members are by no means inconsiderable, and it is seriously to be doubted if much more can fairly be demanded, or a higher degree of discipline, knowledge or efficiency be asked for or obtained under the existing conditions. It is, however, more than probable that with the obsolete and harmful system of elections out of the way, and a correct system adopted and in practice, much further progress may be confidently looked for. Otherwise, the limit of possibility is in sight and may soon be reached."

BINGHAMTON, N. Y., March 7, 1903.

"Some Intelligent Criticism."

The Army and Navy Journal.

Capt. Matthew F. Steele, 6th Cavalry, U. S. A., contributes to the JOURNAL OF THE MILITARY SERVICE INSTITUTION an article entitled "Letters to a New Captain of Horse, from His Father, an Old Troop Commander," which we heartily commend to every young officer of the mounted service. For in these letters Captain Steele has embodied as much practical advice and kindly suggestion based upon extended personal experience as has ever been presented in a paper of similar proportions, and it is all so clear, and written with so much sympathy and humor that no young officer can read it without real benefit to himself and the Service. The troop commander's duties to himself, to his lieutenants and to the enlisted men and the horses of his command are dealt with by Captain Steele in a manner which shows that he possesses a lofty sense of the dignity and requirements of his profession. He reminds his readers that soldiers like an active captain, one who is ready to begin work with them at reveille and give the Service as much of his own time as he exacts of theirs. He urges constant attention to the requirements of health, comfort, diligence, order and neatness, and he suggests that the young captain adopt the following prayer for daily utterance: "Help me, O Lord, to be just to my men, to be patient with them, not to expect too much from the ignorant; to control my temper with horses and men; never to humiliate a soldier; never to be sneering or sarcastic, nor abusive in language or manner to one; never to try under any circumstance to be "funny" or facetious or joking with soldiers, but always to be dignified and in earnest in their presence; never to set one a bad example in anything, nor expect one to be a better man, soldier or citizen than I am willing to be myself; never to be imposed upon by the bad or the bootlicking, nor prejudiced against them that try to do their duty; always to keep a just balance between my duty to my lieutenants and men, and my duty to the Service; never to be actuated by a selfish personal motive, never to leave undone anything that would benefit my troop, my regiment, the military service or the Government. Amen. P. S.—Use such influence as you may have with Congress to induce it to grant our non-commissioned officers pay commensurate with their duties and responsibilities." We have not here attempted to do more than offer a mere hint as to the humor and practical value of Captain Steele's capital paper, but we are confident that every officer who reads it on the strength of this suggestion will thank us for bringing it to his notice.

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Major James Chester, U. S. A., retired, has an article on the "Great Lesson of the Boer War" in the current number of the JOUR-

NAL OF THE MILITARY SERVICE INSTITUTION, in which he holds that the one great lesson to be learned from the record of that conflict is that "armies should always have sufficient transportation." This proposition is so distinctly a truism that one might suppose that it needed no urging, yet Major Chester contends that if it had been properly observed the British campaign in South Africa would doubtless have been much shorter and less difficult than it was. He divides the campaign into three periods. The first is included between the first arrivals of British troops and the arrival of Lord Roberts. The second between the arrival of Lord Roberts and the occupation of Pretoria. The third between the occupation of Pretoria and the final surrender of the guerilla chiefs. The first was the period of preparation, during which many ill-advised and unsuccessful operations were undertaken by British commanders whose troops were hopelessly hampered by the lack of transport animals; the second was the period of actual war, during which the Army, properly equipped, was able to drive the enemy from one position after another without having to make a direct attack in any instance; while the third period was what Major Chester describes as "perhaps the best example of guerilla warfare that we know anything about." The success with which the Boers were able to "stand off" the British, during that period, Major Chester attributes to the fact that they were constantly supplied with food, scouts, horses and forage by friendly families who were allowed to remain on their farms unmolested. But when these sympathizers were taken into the concentration camps the guerilla campaign went to pieces. The British, amply supplied with transport animals, and following tactics adapted to the physical conditions of the territory in which they were operating, forced the struggle to the inevitable end. But it is probably true that the conclusion would have been reached much earlier if the vital problem of transportation had been properly adjusted at the outset.

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In view of the increasing interest in the education of Army officers, not only in the United States but in Europe, special importance attaches to an article on the subject which has been prepared for the JOURNAL OF THE MILITARY SERVICE INSTITUTION by Major William Murray Black, Engineer Corps, U. S. A. Major Black has made a careful study of the methods of military education employed in England, France and Germany, and as the result of a comparison between them and the method employed in the United States, he concludes that our system, notwithstanding its excellence, is capable of still further improvement. He is strongly impressed, for instance, with the recommendation of a British Parliamentary Commission in favor of establishing a "probationary" period for cadets graduated

from the great military schools of England. The commission recommends that such cadets be commissioned as "probationary" 2d lieutenants, and that they shall serve as such for two years, after which they may receive full commissions on the report of the three senior officers of the regiments to which they are attached certifying that they are in every way fit. This is already the practice in the German Army, and Major Black favors its adoption in the United States Army. He calls attention to the fact that of all officers entering the United States Army only those graduating from the Military Academy have received a systematic intermediate training, and even among these, he adds, there are men who are failures as officers. The point urged by Major Black is that all applicants for commissions in the Army should be subject to the same requirements, no matter whether they come from the Military Academy, or from the enlisted service, or from civil life, and he urges a broader application of the competitive principle in making appointments. The Major, therefore, advises higher educational standards in examinations imposed upon civilian candidates for commissions; he would give a certain degree of credit in those examinations for knowledge of subjects, general or technical, which are not made obligatory in examinations; he would open the examinations for civilian candidates to all young men possessed of certain requirements, thus making them truly competitive, and finally he would provide a course of special training for those aspirants in the enlisted service who have passed a preliminary test. In the paper which we have thus briefly outlined, Major Black has indicated the course which military education in the United States should follow. The standards established at West Point must not be lowered, but those for civilian candidates for commissions must be raised. The qualifications required of civilian applicants in the United States are much lower than those prescribed in England, France or Germany, and in the last-named country the "probationary" period is already a fact. It may not be altogether agreeable to the young officer, but it means thoroughness, and that is the main point.

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Col. Edward Hunter, J. A. G. Department, U. S. A., is a strong supporter of the present method of administering military law, and believes that if it were liberalized or accommodated to the variable spirit of the times or to popular opinion, the results would be prejudicial to discipline and the best interests of the Service. He holds, in an article in the JOURNAL OF THE MILITARY SERVICE INSTITUTION, that the safety, honor and reputation of the Army depend to a notable extent upon the judgments of its courts-martial, and he sternly resents the criticism which has been visited upon those bodies in general merely because a few of their number have been

partial. But in order that these courts-martial may truly perform the duties required of them, he urges that young officers should be required, as in the English service, to attend, for a stated time, the proceedings of all courts-martial and not be nominated members of courts-martial until the commanding officer shall report them as competent to perform so important a duty. The force of this recommendation is obvious. The honor of the Army depends upon its courts-martial, the usefulness of these tribunals depends upon the integrity and learning of their individual members, and those qualities must be developed and trained by practical study and experience. The theory and practice of military law constitute a science which should interest every progressive young officer in the Service, and the proposition to make the study of it compulsory, within certain limits, is in thorough accord with sound educational policy.

THE BATTLE OF SACKETT'S HARBOR, 1813.

Letter of the Commanding Officer on the American Side, Jacob Brown, Brigadier-General of Militia, to Daniel D. Tompkins, Governor of New York. (Chamberlain MSS., Boston Public Library Bulletin, February, 1903).

GENERAL BROWN*

NEAR QUARTERS,

SACKETT HARBOR, June 1st, 1813.

DEAR SIR: You will have received mine of the 29th ult from the field of Battle. All that I have stated is *so*. I have now to add that on the 25th ult I recieved a communication from Genl Dearborn desiring me to take the command of this Post——.

I hesitated. Col. Backus was here an officer of experience in whom I placed the most im-implicit confidence & I could not do an act which I feared might wound his feelings. In the night of the 27th Col. Backus wrote me by Major Swan desiring that I would come & take the command. I could no longer hesitate. Early in the morning of the 28th I was here—as the day opened Lieut Chancey the Brother of our worthy Commodore came in from the Lake firing alarm Guns. The signal Guns that had been agreed upon some days previous to rally the

* Brown, Jacob (born in Pennsylvania 1798, died 1828). Brig.-Gen. N. Y. Militia, June, 1812, to July, 1813. Brig.-Gen. U. S. A., July 19, 1813. Maj.-Gen. January 24, 1814, General-in-chief of the Army June 1, 1821, to February 24, 1828. Received the thanks of Congress November 3, 1814, for his gallantry and good conduct in the successive battles of Chippewa, Niagara and Erie, U. C., in which British veteran troops were beaten by equal or inferior numbers; and with the presentation of a gold medal emblematic of these triumphs. Died Washington, D. C., February 24, 1828.

militia were fired in answer, and I sent out expresses in every direction to alarm the Country. As soon as Lieut Chancey came into Port he advised me that the Fleet approaching was the Enemys and with the Glass we could distinctly perceive that they had a very liberal supply of Boats. I then no longer doubted but that they were resolved to Land with a chosen Body of Troops & storm our works. The few Artillerists we had to man the Guns of Forts Tompkins & Volunteer prepared themselves for the worst & Lieut Chancey did every thing possible to support & strengthen Navy Point, the Guns on which were altogather under his command & manned with his officers & men—As Col. Backus had very recently arrived on this Station I invited him and others to accompany me in a thorough examination of the Grounds around our position and as soon as this had been done we settled a regular plan of defence with Lieut Chancey. I had ever been of the opinon that no military man would ever risque the landing men in the mouth of Sackets Harbor for reasons which it would be superfluous here to explain. I knew that there was a place where determined men could land with considerable safety under cover of the fire of their small Flat-Bottomed Gun Boats that I also knew had recently arrived from Montreal & were in all probability with the Fleet. At the Waters edge near Horse Island where I believed the Enemy would land I was resolved to meet them and with this view the plan of defence was settled between myself, Col. Backus, Col. Mills, Lieut Chancey, Major Swan & Major Brown. I was to meet the Enemy at the waters edge where I believed that they would land with all the militia that came in and the Albany Volunteers under Lieut Col Mills. At the alarm or order given by me Col Backus was to order a Body of Regulars to advance so as to meet the Enemy after they had broken or disposed of the force with me. The force with me being broken I was to rally them and fall upon the enemys right flank so as to retard their approach towards Fort Tompkins as long as possible always hoping that the Country would send forth all its means to our assistance & believing that to gain time was to ensure victory. If however the enemy should overcome the assembled Regulars & militia and drive us the whole length of way from Horse Island to Fort Tompkins & carry that Fort, Lieut Chancey would then & in that case see the stores on Navy Point destroyed, the new Ship burned & retire with his Schooners and the men he had left to the south shore of the bay, East of Fort Volunteer. The force remaining with me were to retire to Fort Volunteer, being the highest Ground—as our dernier resort and if the Enemy should prove too hard for Lieut Chancey he was to land his men, blow up his vessels & join me in Fort Volunteer, when he would be governed by circumstances. This being our plan & the Enemy having first struck us as contemplated it remains to see how well our plan was executed. The wind

being very light during the whole of the 28th and the Enemy having arrangements to make for landing, they moved slowly up the Bay but no doubt would have attacked us in the course of the afternoon had it not been for the approach of Boats from Oswego with reinforcements. This circumstance diverted them for a time, they attacked the boats, took of them and a number of our men with what loss to them or to us in other respects I am yet uninformed. In the course of the 28th & night of the 28th & 29th a considerable number of militia collected. They were as they arrived ordered to a small improvement on the main just within Horse Island and such provisions as could be furnished for them was carted to the Ground where they all ate in common paying no attention to the ordinary mode of drawing rations. Col Mills with the Albany Volunteers was on Horse Island—In the Evening of the 28th I joined the force assembled near Horse Island & explained to the leading officers my views as I feared a night attack it being of the first importance to the Enemy to be rapid in their movements to prevent the fatal effects to them, of the Force that would be assembled by morning and of those brave men as I supposed that would generously fly to their Countrys standard, ambitious to have a name in the victory which I most firmly believed was certain. As the morning of the 29th approached I found myself with a part of three Regiments of Militia & the Albany Volunteers amounting altogether, say to five hundred men, all anxious for the Fight, were you to believe *thier professions*. The moment it was so light as to see an object on the Bay the Enemys Ships were discovered in nearly a direct line between the Head of Horse Island & Stony Point and within ten minutes thirty three boats filled with men approached us from the south side of the larger Indian or Garden Island when the action in fact began as the Enemy immediately opened upon us with thier Gun Boats—I immediately directed Col Backus to advance & ordered Col Mills to join me on the main. The moment Col Hills had joined me I ordered of the Albany Volunteers who had the command of a haveling Brass six pounder to open upon the Enemy. The Albany Volunteers under Col Mills were then laid down on the right behind a small natural Breastwork on the beach & all the Militia under Col Sprague behind the same natural Breastwork on the left & those under Col Tuttle to take a position that I pointed out about thirty rods upon my left Flank by the edge of the Woods near the Bay to prevent a surprise from savages that I apprehended would come in from that quarter. The Enemy by this time had landed a body of men at the Head of Horse Island who were advancing in open Column upon a line with the Enemys front Gun boats. Every exertion was then made to inspire my little force with confidence. If they would but lay firm & retrain thier fire I was confident that every man must early kill

his man. I then took my position in the center by the left of the men at the six pounder directly in front of the Column approaching from the Island and all was silent with me excepting this six. The Enemy rapidly approaching and keeping up as heavy a fire as possible from thier boats, not a shot was fired from the Column, the front approaching, charging Bayonets. It appeared impossible to restrain raw Troops so as to make them in any high degree usefull. Those with me did fire & would fire before I intended. The Enemy were however pretty near and as I was attentively watching thier movements & the happy effects of our fire to my utter astonishment my men rose from thier cover, broke & before I could realize the disgracefull scene there was scarcely a man within several Rods of where I stood. Col Mills fell gallantly struggling to stop his men. I was more fortunate. I made all the noise I could for my men, put my handkerchief on the point of my sword & made every signal possible that they might notice me, but in vain. At a little distance however I had the good fortune to come up (with) Capt McNitt who had succeeded in rallying a few men and they were doing all they could from behind some large logs by the edge of the field— I complimented them & complained of those who had left me ordered Capt McNitt to stand fast and I would go & call up Col Tuttle from the Point where I had ordered him. I went but no Col Tuttle could I find or any other man. By the time I returned Lieut May, & a few others had joined Capt McNitt. I then ordered an advance upon the rear of the Enemys right Flank & I trust some execution was done, but as my party did not exceede one hundred and as I deemed it very important for me to know how things stood in front of the Enemy where the Regulars were most nobly contending I ordered a rapid movement forward to pass the Enemy and as we were advancing a fire came at some distance upon *our* right Flank. We halted, faced about & McNitt was in the act of firing when I ordered a little delay saying they must be our friends. In a moment we saw the Redcoats approaching from the right of the path along which we had passed. McNitt gave them his best fire and we made a rapid retreat upon the extreme left of the few brave men who had sustained the contest in front—As I last turned from the woods upon the left of my Friends I saw an alarming flame arising from Navy Point the position that contained the spoils of York and some few of Commodore Chanceys effects. With all possible expedition I made my way into Fort Tompkins & found the officer Lieut Ketchum I had left there in the act of touching off the long thirty two at the Enemys Shipping—I desired him to keep up as heavy a fire as possible and assured him that victory was ours. He replied Genl. I cannot discharge this gun again, the flame from the marine barracks is so hot that my men cannot exist here. I felt the force of his answer & replied do the best you can & left him. Being alarmed

for the Ship, the object of the Contest I hurried towards her & found Major Brown who assured me the Ship was safe and that what had happened was owing to the infamous conduct of those in whom Lieut Chancey had placed confidence, that it was without his knowledge, that they had gone from Navy Point & informed Chancey that all was lost on upon the right of our line of Battle. I ordered Major Brown to send forthwith to Lieut Chancey and assure him all was safe on the right & that Victory was ours. In passing up to the junction of the Brownville, midale & Adams roads where I percieved some hundred of idle men assembled at a very respectfull distance from danger Major Swan rode up to me & informed me that the fixed ammunition was expended. I replied it may be so I do not believe it—but if it is so tell no man.

I then rode among these People & they tried to impose upon me as they had upon the Major but I knew them better & could admit of no excuse. Many of them had drawn their Boxes full the day before & never fired a Gun at the Enemy. With much ado I got them to move toward the right Flank of the Enemy in hopes of throwing them in the Woods behind Sir George should he presume further to advance. I then ordered Major Lucket who I knew would not hesitate to advance with his mounted Light Dragoons into the open space west of Judge Sackets old house & nearly in a line between the Enemy & the Ship. It was done. Hurrying then to where the American & British Regulars fought I very soon felt that victory was really ours and if Sir George had not been off with almost the rapidity of thought he would not have returned that day.

The closing scene of this glorious day for the officers & soldiers of Regular Army who had the honor to be on the spot you have in my dispatch of the 29th ult.

I have only to add that in relation to the officers Generally that they are men who do honor to thier Country & that they would do honor to any age or nation. To Capt. McNitt of the Militia I have presented the sword that I wore on the 29th as a testimony of my esteem & regard for his Gallant conduct & I should be gratifyed if you would cause him to be appointed in the Regular Army. To Col Backus, who praised be God still lives—I have presented the sword taken from Adt Gen Gray who was killed not distant from where the noble Backus fell & by the side of Sir George Provoost.

I have directed Major Swan, who had the Goodness to Volunteer his services as my acting Adjt Genl. & to whom I feel myself under the greatest obligations for his attentions during the arduous scene, through which we have passed, to make & transmit with this dispatch a return of the killed wounded & prisoners of Both sides & also of the parts of Regiments of the Regular Army engaged that you may have a correct idea of the amount of force on our side & that the parts of Regiments engaged may have the honor they have so fairly earned.

The Enemy that landed were at least one thousand picked men & thier fleet consisted of the new Ship Wolf, Royal George, Earl Morven, Prince Regent & two Schooners besides thier Gun & other Boats. As I am closing this communication Commodore Chancey has arrived with his squadron & as I can be no longer useful here I shall return home in the morning. I must yet add in justice to a brave honorable man that Lieut Chancey stands higher in my estimation than he did before he was associated with me for the protec tion of this place. No blame can attach to him for what happened on Navy Point. He was decieved by the materials on whom he relied & nothing short of Divinity can guard against such occurrences.

Lieut Col Tuttle of the Regular army who was on the march to this place made every exertion that an officer or soldier could make to get into the action but came too late for the fight & I am confident that Lieut Col Tuttle & every officer under his command feels it as an idividual misfortune that it was not in thier power to get up in time.

Your Excellency as Commander in Chief may think that I bear hard upon the militia. I do them justice Sir. Nothing short of a certain guarantee for my souls happiness after death could have given me such comfortable & gratefull feelings as to have obtained a victory over Sir George Provoost & the best men he could collect in which the militia under my Command should have had a principal agency. But Sir this is not the fact. The noble men both officers & Soldiers of the Regular Army & some few, precious few Citizen Soldiers who nobly resisted the Shock of the Foe men the Foe of Basswood Cantonment are the men who merrit the honor of this Victory & Sir they must have it. Of the precious few Citizen Soldiers who distiguished themselves Mr. Channing stands conspicious.

Respectfully yours,

JAC: BROWN Brig: Genl Militia.

THE SPANISH CAMPAIGN IN THE PHILIPPINES. 1896–1897.*

(Translated by Captain John R. M. Taylor, 14th U. S. Infantry.)

IN the early part of August, 1896, the island of Luzon was almost without troops, the greater portion of the Spanish forces being still in Mindanao and Jolo, hence great excitement was produced when Gen. Blanco, Governor of the Philippines, was advised of the intrigues of secret societies working to separate the Archipelago from Spain. About the twentieth, arrests were made in Manila. They confirmed the existence of a secret agitation in the islands. These measures precipitated the explosion. Armed parties took the field.

*From "Les Philippines et l'Insurrection de 1896-1897." Extrait de la Revue Militaire de l'Etranger, Paris, Janvier, 1899.

On the night of August thirty-first the posts of the civil guard were attacked almost everywhere in the Provinces of Cavite and Manila; some of the guards were made prisoners, others joined the insurgents, the officers were assassinated, the arms were carried away.

In Cavite the insurrection was of marked violence. The 200 men who composed its only garrison held their post with difficulty. The campaign of Manila had begun; the insurgents were at the gates of the city; the feebleness of the Spanish force condemned the governor to impotence, General Blanco proclaimed martial law in Manila and the seven surrounding provinces. A few days sufficed to render the situation very serious; the insurgents were seen to have a unity of views and a power of action which only an organization which had existed for a long time could have given them.

The military commander immediately took all measures necessary to ward off the danger; he urgently asked for reinforcements from Spain; recalled such forces as could be spared from Jolo and Mindanao, and organized a first battalion of volunteers.

The few troops in Manila and Cavite did not remain inactive during this period, they made some reconnaissances in the vicinity of those cities, but their numerical inferiority exposed them to checks which increased the audacity of the insurgents. In a short while it was seen that the only possible thing to do was to wait and in the mean while restrain the people of Manila and Cavite who were being excited by insurgent emissaries.

PERIOD OF EXPECTANCY.

Fortunately the geographical conditions in the Province of Cavite, where the insurrection developed with the greatest intensity, were favorable to the Spaniards. Thanks to their vessels, they were masters of the sea and of Lakes Bay and Taal, only leaving to the insurrection over which to spread abroad narrow and easily watched passages.

Between the fifth and eighth of September, the 73d regiment of infantry and a company of engineers arrived from Mindanao. They served to reinforce the garrison of Cavite and many places along the Lake of Bay.

The Governor of Cavite profited by this to organize at San Roque strong defenses for the isthmus which connects that city and the mainland, and to put the arsenal and the important military establishments there in a state of defense.

On September 30 all the troops from Mindanao had arrived. This force consisted of a brigade of infantry, 310 artillery, one mountain battery, one company of engineers.

Two battalions were expected from Spain at any moment, others were in preparation or on the way.

On account of the proportions which the insurrection had assumed these forces were insufficient, but they were at least enough to restrain it within limits and to watch the surrounding provinces to prevent them from rising.

The existence of Lakes Taal and Bay facilitated the execution of this plan by isolating from the remainder of Luzon the parts of the provinces of Laguna, Batangas and Cavite, which had revolted.

It was only necessary to aid nature by establishing fortified lines, occupied by relatively small forces, to close to the insurgents the narrow isthmus which led to the neighboring provinces. Two of

these passages were already closed, one by the Pasig and the other by the Pansipit water courses connecting the lakes with the sea.

Gen. Blanco skilfully availed himself of the geographical characteristics of the country. He at once established a line from Lian to Balayan, intended to cut off from the insurgents the eastern part of Batangas province. Then he strongly occupied Taal and Saint Nicolas in order to guard the passage of the Pansipit. North of Lake Taal, where the country was more difficult to observe, he garrisoned San Domingo and established in advance of it the line Calamba-Tananan-Banadero, intended to protect the provinces of Laguna and Batangas.

On the side of Manila he had the Pasig patrolled and its approaches defended by placing in a state of defense the line Paranaque-Las Pinas.

Daily reconnaissances were made from the points thus occupied; on their side the rebels made constant attack on the circle which enclosed them. The capture of Nasugbu (18 Oct.) by Gen. Jaramillo, the defense of Lian (21 Oct.) the combats at Pansipit (24 Oct. and the days following); then to the north of Lake Taal the capture of Talisay by the insurgents, the attacks on Bilog-Bilog (18 Oct.) and on San Domingo (27 Oct.) are the principal military events during this period of expectation.

ACTIVE OPERATIONS.

Little by little the Spanish troops grew accustomed to the war. The daily operations had developed cohesion, very feeble at first, in the different commands in which the commanders and soldiers taken right and left in the peninsular had not had time to know each other.

On November 1 they were in the best condition possible. Gen. Blanco had then three battalions of marines and four battalions of Spanish cazadores; he decided to assume the offensive in Cavite, always the centre of the insurrection. He collected considerable quantities of supplies in Cavite, Delahican, a village of the peninsular of Cavite, where he had established his camp, and in Calamba.

He found the forces concentrated at these three points into three columns; the first two under command of Gen. Rios marched from Cavite on Noveleta, the other transported by sea to Binacayan was to take possession of that village. The third that of Calamba, was composed of 1500 men under command of General Aguirre commanding in the provinces of Laguna and Batangas, its duty was to march on Silan by Talisay and to join there a column then formed at Banadero.

These operations were to commence on November 8th, but on account of delay in disembarking the command at Cavite, they were delayed to the ninth.

They were not successful, the attacks failed everywhere; the command directed on Binacayan was forced back with a loss of a hundred men, the column directed on Noveleta could not take possession of the trenches defending the approaches to that town, and lost 150 men in the attack. The two columns, exhausted, regained Cavite.

To the east of the province the operations commenced on November eighth. On the twelfth, Talisay, which the insurgents had defended by barricades and whose convent they had placed in a state of defense, was taken. General Aguirre was joined there by the column from Banadero. But the check suffered near Cavite by

MANILA BAY
MANILA
CAVITE
LAKE de BAY
PROVINCE of CAVITE
PROVINCE of BATANGAS
Lake
TAAL
BALAYAN BAY
Kilometres
mountain chain

the Spanish troops decided Gen. Blanco to suspend the movement.

He gave orders to Gen. Aguirre to return to Calamba by way of Banadero; from Calamba he was sent to Santa Cruz, the La Laguna, to suppress a rising which had just taken place. Laguna Province was pacified in a few days, and on December first the command was again concentrated at Calamba and Santa Domingo, where a camp for 4,000 men was prepared.

Gen. Rios' brigade was reorganized in Cavite, on December 1st; it also was ready to take the offensive. Unfortunately the fluctuations of Spanish politics in the Archipelago again prevented it. Gen. Blanco attacked in rear by the clerical party which reproached him for showing too great indulgence in the repression of the insurrection and for his not accepting their advice, was recalled and replaced by Gen. Polavieja, who succeeded to the command December 12th, 1896.

COMMAND OF GEN. POLAVIEJA.

At that date the force at the disposal of the new Governor-General in the Archipelago was composed of 19,000 native and 17,000 Spanish soldiers. This force was divided into ten battalions of infantry (cazadores and marines); 400 heavy artillery; one battery of 9 cm. guns; one squadron of cavalry. In all, 36,000 men, of which 30,000 occupied the Provinces of Manila, Cavite, Laguna, and Batangas, in Luzon.

When Gen. Polavieja assumed command he proceeded to carry out the plans of his predecessor; he intended to strongly occupy the lines which shut off the centre of the insurrection in the Province of Cavite, in order to finish with the scattered centres in the neighboring Provinces, after that he intended to employ the majority of his command in Cavite Province to finally trample out the insurrection there.

In consequence he changed the assignment of troops to Laguna, Batangas and Tayabas Provinces and formed them into a division under command of General Lachambre. There were three brigades, two in Laguna Province, commanded by Generals Comen and Marina, the third, in Batangas, commanded by Gen. Jaramillo. Rios' brigade continued to occupy Cavite. Galvis' independent brigade occupied the line of the Pasig and covered Manila.

The execution of the first part of this plan of pursuit occupied the army until Jan. 1st, 1897, numerous light columns rid the Provinces of central Luzon of the scattered groups of insurgents which occupied them. The rebels were held in about Cavite in spite of their repeated attacks upon the lines which confined them. The attacks on Santo Domingo, Catalayan, Las Pinas, the daring offensive movement toward the line of the Pasig followed by a hasty retreat on Pampalona, were only the principal manifestations of the activity of the enemy.

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OPERATIONS AGAINST SILAN.

The staff had been informed of the dispositions of the enemy by spies and frequent reconnaissances. The three principal centres were known to be Silan, Noveleta, and Imus. General Polavieja resolved to finish first with Silan; at the same time he had to hold the insurgents at the other points by means of vigorous demonstrations.

In consequence, Lachambre's division concentrated at Calamba, where a large quantity of supplies had been collected, was ordered to move in two columns on Silan. General Jaramillo was at the same time to move from Taal on Bayuyungan and menace Amadeo.

In the northern part of Cavite Province the general-in-chief with Galvis' brigade concentrated at Las Pinas was to menace Bacoor. The troops in Dalahican were to make a demonstration on Noveleta.

Operations were to begin about the middle of February, 1897.

On February fourteenth Lachambre's division moved on Silan by Santo Domingo. On leaving that place the troops moved in two columns, the first, Cornell's brigade with the artillery and squadron of cavalry, moved directly on Silan, the second column, Marina's brigade, was to turn the town by the south.

In spite of daily attacks by the insurgents, particularly on the night of February eighteenth, the two brigades met on the eighteenth at Iba, three kilometres to the east of Silan. The lines of the Tibagan river which, defended with trenches and redoubts, covered the town, was attacked on the nineteenth. The river was passed at eleven o'clock in the morning, in spite of the desperate defense of the enemy, and the Spanish flag was planted on the convent of Silan, the centre of resistance. The Spaniards had 15 killed and 120 wounded; the insurgents left over 500 of their men on the field.

Lachambre's division remained at Silan until February twenty-fifth, profiting by the delay to place the town in a state of defense. On the twenty-second a furious attack of the enemy, who desired to retrieve his failure, was repulsed.

On the twenty-sixth the march was resumed, this time directed toward Dasmarinas, where spies reported a large body of the enemy, reinforced by the men who had fled from Silan. The division, leaving three companies in the convent at Silan, marched in a single column, Cornell's brigade serving as the advance guard. The column was covered to the left by two companies, to the right by a battalion. On February twenty-sixth the division moved against the trenches covering Dasmarinas. These were carried by a bayonet charge and the town was taken in spite of the heroic efforts of the defenders, commanded by Aguinaldo in person, aided by his defender Estrella. That day was one of the hardest for the Spaniards; it cost them 20 dead and 120 wounded; the enemy abandoned more than 500 dead bodies.

From February twenty-sixth to March seventh, 1897, the division remained at Dasmarinas, and General Lachambre profited by the delay to reorganize his line of communication. He abandoned Calamba as the starting-point of his trains, and took Binan as a depot, the line Binan-Carmona-Silan being shorter and better.

After having had to resist incessant attacks, General Lachambre left Dasmarinas on March seventh, leaving a garrison of two companies and moved on Salitran, which he took possession of on March eighth. Everything went well in the eastern part of Cavite. The result of the operations in the rest of the province was not less favorable.

Jaramillo's brigade left Taal on February twelfth, moving on Bayuyungan where the insurgents were strongly intrenched. The town was taken and occupied on the sixteenth. The loss in the attack being only about thirty men.

On its side Galvis' brigade moved on the fifteenth from Las Pinas on Pampalona. The village, strongly intrenched, was taken;

its capture permitted the establishment of the line Las Pinas-Mantinlupa, so important for the defense of Manila and for covering the line of the Pasig.

When General Lachambre took Salitran he sent General Zabala with his half brigade on a reconnaissance toward Imus. The line of march had been cut by trenches at a short distance from the road occupied by insurgents. At the first attack General Zabala was killed. The half brigade took possession of the works, but did not advance further, and returned to Salitran.

General Lachambre having discovered the difficulties in the way of an advance on Imus, decided to join the force of General Barraquer to his, before attempting it. The latter occupied the line Las Pinas-Mantinlupa, and a movement in that direction would facilitate the establishment of communications with Manila and rationing the division. General Lachambre began by establishing a large depot of supplies and ammunition at Salitran. Then, having left a garrison of two companies with the 9 cm. guns and gun detachments, he moved on the ninth toward Almansa.

The insurgents in vain endeavored to check the advance of the column by attacking it along the Zapote river, which it crossed without meeting a force sent out from Almansa to meet it, and finally, on the tenth, connection was made with General Barraquer.

Henceforth the line of communication of General Lachambre's division was Pampalona-Almansa-Salitran; immediate steps were taken to improve that route. Crossings and dangerous points were protected by redoubts and works; posts placed in *échelon* permitted resistance to the continual attacks of the insurgents. Connection with Manila and General Barraquer having been thus assured, Lachambre's division was able to proceed to the attack on Imus, its principal operation.

Everyone who had fled from the towns, forced back little by little by the Spanish columns, had taken refuge there and had transformed it into an intrenched camp. It was the heart of the insurrection.

The division having been reinforced was reorganized, being divided into three brigades under the orders of Generals Marina, Ruiz-Sarralde and Arizen.

(TO BE CONTINUED.)

WHAT LESSONS CAN WE DRAW FROM THE BOER WAR FOR OUR INFANTRY ATTACK?*

By Lieut.-Colonel von Lindenau, German Army.

(*Translated by Captain Carl Reichmann, U. S. A.*)

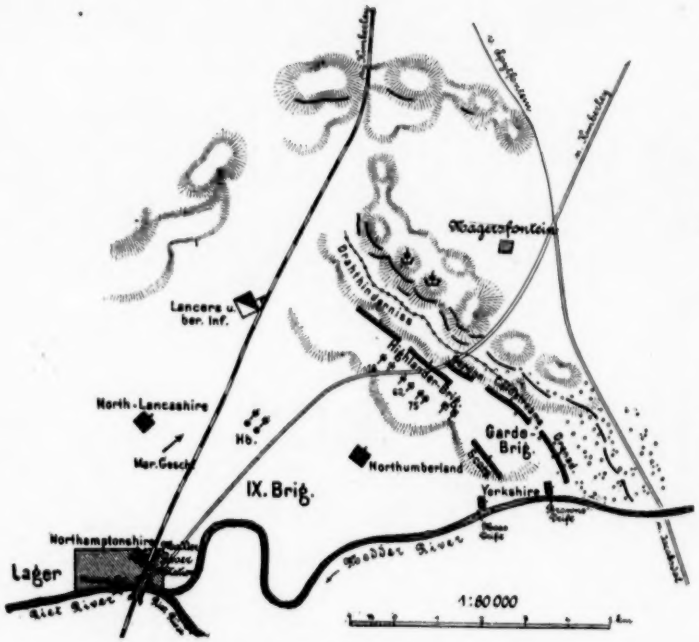
III.

12. FORMS OF ATTACK.

In considering the forms of attack used by the British troops in the three battles, we note, in the first place, their great diversity. The principles of the regulations of 1896 had not been generally absorbed. The officers from India and the colonies in particular, lacked in proper appreciation of the effect of

*Concluded from March-April Journal M. S. I.

BIRDS-EYE VIEW.



SKETCH OF THE BATTLE NEAR MAGERSFONTEIN.
Position Dec. 11, 1899, about 1 P.M.

modern arms. In no other way can we explain the advance of the 5th Brigade under General Hart in dense columns, or the advance to the skirmish line 600 meters from the enemy, of the two batteries under Colonel Long who had fought at Omdurman with great distinction. The advance of the Highland Brigade at Magersfontein is a careless stumbling on a position which they could not but believe occupied by the enemy. The attack of the Guard Brigade at Magersfontein and of the 2d and 6th Brigades at Colenso, and of the brigades attacking east and west of Spionkop conformed on the whole to the regulations. These attacks, however, failed to make proper headway, none ended with seizure of some point of the enemy's position. Some attacks got beyond the middle distances, most of the others broke down before.

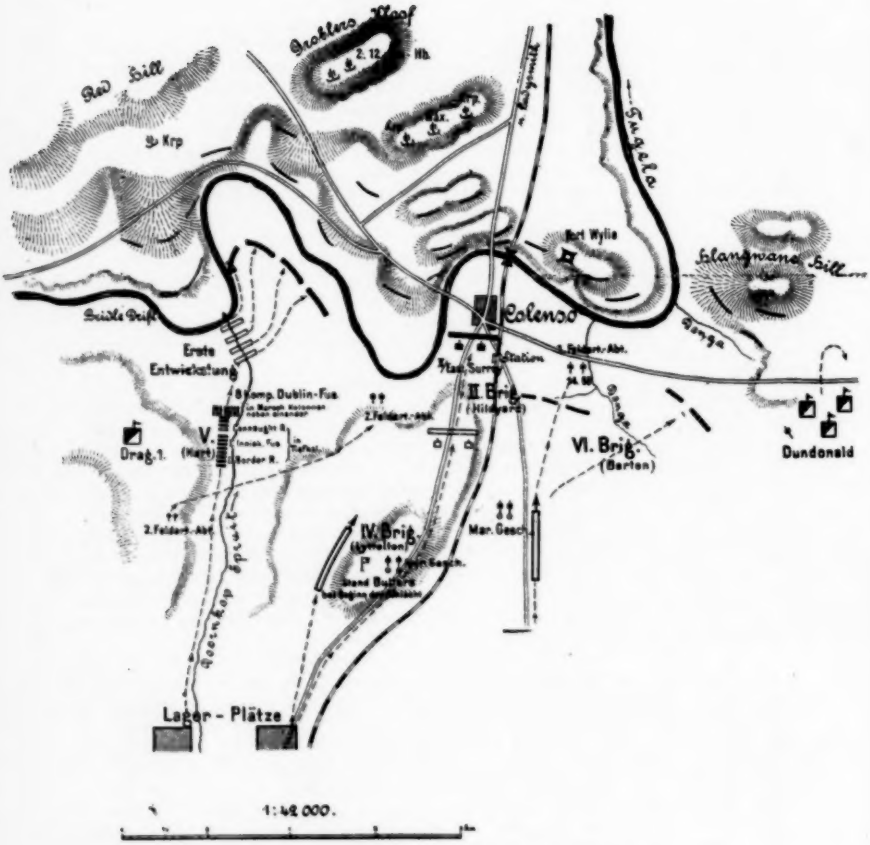
This was for the most part due to the improper way in which supports and reserves were arranged within each unit and brought forward. It is stated that in some cases their formation was too close and they were too near to the lines in front, a method which provides its own punishment and which, unfortunately, we still see all too frequently in our maneuvers. It should be noted here that in view of the effect of modern shrapnel the distances of 200 meters is insufficient which our drill regulations prescribe for the different lines on open ground. In view of paragraph 28 of the field artillery firing regulations the distance should be increased to 300 meters.

Aside from the lack of skill in bringing up the lines in rear, the failure of the British attacks is largely due to the failure of the various units to properly time their attacks. Thus at Magersfontein the attack of the Highland Brigade preceded that of the Brigade of Guards. At Colenso the 5th Brigade on the left attacked first, the 2d Brigade on the right attacked later, and the 6th Brigade last. At Spionkop Lyttleton advances first and attacks the Brackfontein heights, next Clery attacks Taba Myama, then Woodgate attacks Spionkop, and, finally, Lyttleton renews his attack on the Brackfontein heights. The defenders were not sufficiently held down in their position and were able to move troops at will along their extensive front, and their troops being nearly all mounted the movements could be made with surprising celerity.

At Magersfontein and Colenso the defenders occupied a front of 9 kilometers, at Spionkop 17 kilometers. The British decided to make a concentrated frontal attack, but made the mistake at Magersfontein and Colenso of deploying a division on a front of 6 kilometers, the front of a full army corps, and at Spionkop of spreading their forces over a front of 12 kilometers! Nowhere is there a solid attack, of units posted side by side each charged with its own task, which, beginning from the rear, gradually gains a powerful impetus. At some points the conduct of battle is such that part of the troops are looking on while the others are being beaten.

The foregoing description of the battles shows sufficiently how much there is to that "beautiful attack formation" of the British in the opening battles of the war.* I am wholly unable to understand how any one can conclude from the course of the conflicts described that the principle of subdivision in successive lines as laid down in our drill regulations has been

* See "The Attack of the German Infantry," *Berliner Neueste Nachrichten* of Jan. 14, 1902.



SKETCH OF THE BATTLE NEAR COLENSO.
Dec 15, 1899

proved wrong by these actions. A careful examination which I have made of other battles of this War, has likewise failed to furnish me any clew how such an assertion could be justified. It would in the first place have to be deduced from a series of events, whereas we find that there is a surprising diversity in individual cases on the part of the British. It is very difficult to characterize their action in general terms. British action in the first part of the War is characterized by great precipitation and fails through improper formations and insufficient skill of the troops in musketry, never in consequence of the principle of subdivision as laid down in the regulations! In fact we may assert that the action made the best headway wherever the course of the attack conformed most to the regulations, as in the attack of the Brigade of Guards at Magersfontein and of the 2d Brigade at Colenso. Nowhere does the course of the event justify the conclusion "that modern infantry action seems to make the immediate employment of all troops designated for the attack advisable," which would mean the immediate deploy-

SKETCH OF THE BATTLES AT SPIONKOP.

January 19-24, 1900.

ment of all available troops in one dense, strong skirmish line without supports or closed companies in second or third line. I think it is the other way: the opening battles of the South African War prove that in the absence of full knowledge of the situation a sparse deployment of skirmishers is indicated in view of the effect of modern arms. Exactly as our regulations prescribe "sparse" and "without precipitation."

If "subdivision from front to rear or extent of front were the main points of contention of modern infantry tactics," it would be necessary to dismiss at once the idea of immediate deployment in one line of all available troops. The retention of a subdivision in several lines is not at all incompatible with a greater extension of the units, or, better, with an extension of their fighting fronts. The fighting fronts of the troops in first line may, on the contrary, be made thin and broad at the beginning in order to keep troops in hand for forming several lines and for acting against the enemy's flank.

After a body of troops has been completely engaged in one of our European battles it will be unable to extend its wings or move them by the flank; that must be accomplished by means of fresh troops from the rear. The advanced fighting lines of the British did not succumb because deficient in number of men, but because led into battle in improper manner and unsuitable formations and because the troops in rear wholly misunderstood their mission of constantly increasing the fire power of the first line. Frequently they did not open fire at all in the false hope that their advance alone would exercise sufficient pressure on the enemy to make him withdraw. Instead of attacking with their rifles brought from the rear they attacked with their legs.

In view of the increased fire effect it is perfectly consistent to advocate broader fighting fronts of the units without modifying in the least the principle of dividing the troops into several lines. The question of "subdivision, or extension of front," has frequently and unnecessarily been put as though one excluded the other. The "main question" of modern infantry tactics should not be put that way. It would seem more correct to say: "In view of the increased fire effect, what is the best shape to give to the chief fighting formation of infantry, the swarm of skirmishers, on various kinds of ground, and what is the surest way of increasing its fire power to the maximum?"

There can be no doubt that the failure of the British attacks is chiefly due to the inappropriate and faulty manner in which the British skirmish lines attempted to advance and fight.

13. DENSE AND THIN SKIRMISH LINES.

For the open terrain the British skirmish lines were much too dense. In these dense lines the skirmishers were unable to make proper use of their arms and of the ground so as to make their fire action at the midranges effective. In these dense lines they suffered more passive losses than they actively inflicted on the enemy.

In recent experiments at our Infantry Firing School under its present Commander, Colonel Kügler, hits were made at the midranges amounting to 5 per cent. of the rounds fired, and skirmish lines put 25 to 35 per cent. of an equally strong enemy out of action; the British infantry and artillery fire combined put 3.6 per cent.

of the Boers out of action at Magersfontein, 1.5 per cent. at Colenso and 7.5 per cent. at Spionkop.

Of course results obtained at the target range are never even approximated in battle. Still in comparison with the results obtained year after year at the midranges on the German firing grounds, the losses of the Boers appear too small. Deducting from the Boer losses one-third as due to artillery, we obtain as the results of the British infantry fire 2.4 per cent. at Magersfontein, 1 per cent. at Colenso and 5 per cent. at Spionkop. Even the latter percentage is but one fifth of the German minimum of 25 per cent. These results plainly show the lack of training of the British infantry in firing under battle conditions. It is also stated by several that these percentages were due not only to insufficient musketry instruction, but largely to the fact that in their dense line the British skirmishers were in each other's way, and that the rapidly increasing losses in their dense lines and comparatively rapid loss of fire discipline greatly impaired their coolness in the use of their arms. Any attempt of combating the enemy with volleys as laid down in the regulations was fruitless. The noise of battle frequently made impossible such control of fire as was attempted. Neither regulations nor musketry instruction had made the British soldier an efficient, intelligent skirmisher; he fired at random on the hills where he supposed the enemy to be.

British writers make frequent reference to the "impossibility" of locating and seeing the enemy. This would indicate that the eyes of officers and men were not trained in the difficult task of discovering small battle targets at the mid and long ranges. It shows the importance and necessity of making the quick discovery of head targets at the mid and long ranges, and of half or entirely concealed batteries, with the naked eye or with glasses, a special subject of training. The great importance and usefulness of such exercises are frequently not sufficiently understood in our Army. Such exercises can easily be combined with estimating distances and field exercises, and they soon yield satisfatory results if carried out systematically. It is surprising to what degree the eyes of most men can be trained by constant practice.

When opposed to artillery it is not only necessary for the officer to promptly discover the target with the naked eye or glass, he must with equal promptness and by its proper description or designation lay it bare to the eyes of the men. We cannot expect to successfully meet artillery until the skirmishers are trained and practiced in following the eyes of the group or platoon leader with lightning rapidity to a distance of not less than 1500 meters. We have but a few minutes in which to overpower the artillery with our fire, otherwise its rapid fire will destroy us.

At the very first deployment the British skirmish lines were mostly so dense that it is probable they were formed under that paragraph of the British regulations which deals with skirmish lines without intervals. Others state that in some places the men were three or four deep. It is not saying too much that the Boer War has forever done away with that sort of deployment where it is made at the beginning of the action and the attack is made over open ground.

That is no reason, however, to say categorically that thin skirmish lines are better than dense ones and to advocate either to the exclusion of the other.

On open ground devoid of cover the absolute, but not the relative, losses of a dense skirmish line are of course greater. The percentage of loss remains the same. Accordingly a dense skirmish line would be sure to overcome a thin one since it would, at all times, be a fight of a superior against an inferior number.

It is to be noted, however:

The chances are at once in favor of the thin skirmish line if it is properly fed from the rear. It is much easier to put additional men into a thin skirmish line than into a dense one and it makes less confusion.

As a rule, it will also be found easier to increase the fire effect of the firing line by merging into it successive thin lines than to do what seems simpler, *i. e.*, to reach a certain firing position at once with a dense line. In view of the close formation the latter procedure cannot be put into operation without great losses.

As previously stated a dense skirmish line suffers its losses within a relatively circumscribed area. For instance, let us assume a dense skirmish line of 140 and a thin line of 70 skirmishers occupying the same amount of space. After a certain period 30 are hit in the dense, 20 in the thin line. The moral effect of the greater number of killed is greater on the closely packed skirmishers than the smaller number of losses along the long line of skirmishers placed at intervals. Demoralization of troops may therefore be produced more easily by dividing the fire on dense skirmish lines where the casualties are concentrated as to space. Loss of fire discipline and a diminished fire effect will inevitably result from this demoralization with other troops just as they did in the case of the British, though perhaps more slowly. It is, therefore, wrong to carry out the principle "effect before cover" by sending dense skirmish lines over open ground. The effect of the modern quick firer demands imperiously greater intervals for large and small units. The skilful leader will take care that the intervals do not become too great.

In making an interrupted advance with dense skirmish lines we shall not only not produce effect, but we shall be destroyed on the way. Loosely formed skirmish lines are much surer to attain a strong development of fire and a greater effect than dense lines.

There should be altogether less adherence to stiff rules in filling up the skirmish line than heretofore, and any regularity is most inopportune against an alert defender like the Boers who waited for the favorable moment to pour out the mass fire of their quick leader. The more irregularly and suddenly the skirmish line is reinforced, the more certainly it will succeed, but never through an uninterrupted advance and rarely by long rushes in rapid succession. The reinforcements should advance in small bodies, platoons perhaps are best, deployed with intervals, in irregular rushes adapted to the terrain, with halts of varying duration, with strict regard to the terrain and other considerations. An iron discipline systematically cultivated in times of peace will be able to prevent the reinforcements while coming up in small detachments from opening fire prematurely and endangering the line in front.

14. EXTENT OF FRONT.

The superior advantages of deploying thin skirmish lines on open ground suggests the idea that the regulations ought to lay down a greater front for the tactical units, the more as the great fire power

of the multiloader favors this idea. It would be sufficient for that purpose to increase the front of a company to 130 meters.

A battalion would thus have a front of 400 meters. The fronts of the larger units, however, should not be correspondingly increased. The increased fire power of the first line not only permits of covering a more extended front in the first deployment, but also of decreasing the number of units deployed, which accords with the principle of subdivision in the attack formation and leaves troops over for use against a flank. Thanks to its greatly increased fire power our front though less dense is sufficiently strong to repulse a frontal counter attack.

The fighting front of a regiment may thus be put down as 700 meters and that of a brigade as 1,500 meters. The latter is fixed in our drill regulations as 1,000 to 1,200 meters. It should be noted here that in consequence probably of the Boer War both the Russians and the French have increased their fighting fronts; the Russians have fixed 140 meters for the company, 280 for the a bttalion, 700 for the regiment and 1,050 for the brigade; the French have laid down 150 meters for the Compagnie encadrée, 300 for the batallon encadrée, not to exceed 700 meters for the régiment encadrée and not to exceed 1,500 meters for the brigade encadrée.

15. ADVANCE BY RUSHES.

A modification of the present advance by rushes appears to be another important point. Disadvantages have been noted both as to the front and as to the duration of the rush.

The following is stated in the "Military Considerations of the War in South Africa": "The men were slow in getting up and rose successively. In this way the enemy is warned and has time to direct a well-aimed fire against the others while in the act of rising. In this way short rushes made by long lines become too costly to keep them up. Small groups on the other hand, can be moved suddenly, and, in my opinion, the success of a rush depends on its suddenness. Hence it should be finished before the element of surprise is exhausted. We should be most careful not to draw the enemy's attention by a sudden cessation of fire. This is best accompished by the use of small groups." If it is true that the British soldiers rose as here described, we can only say that it can be done better without much trouble. It is only necessary to practice it, or rather to drill it exactly as we drill the manual of arms. No man should rise later than the others. When well trained groups of considerable front may successfully make sudden rushes. Rushes should of course, not be made by entire battalions or large units, nor are such rushes contemplated by the drill regulations. Experiments made by several companies as to the time required by the men in rising, the command being given in the midst of a lively skirmish fire, have given the following results:

A company of war strength	8 to 10 seconds
A platoon of war strength	8 to 10 seconds
A half platoon of war strength	7 to 10 seconds
A section of war strength	6 to 7 seconds

These differences of time are inconsiderable even when opposed to the multiloader capable of twelve shots per minute. When troops are properly trained there is practically no difference in the time

in which a company, platoon, half platoon or group rise. I am convinced if we practice every function of the skirmish line with the same perseverance and thoroughness with which we formerly drilled other things, and if we persist until every function of the skirmisher has become second nature to our men, that in combination with our excellent musketry training we shall gain results which will give us a superiority in which other armies cannot easily equal us. In this connection I beg to invite attention to a supplement of the "Militär Wochenblatt" entitled "Are we training our infantry as battle infantry?" It contains many valuable suggestions. The author is the then Lieut.-Colonel Baron von der Goltz.

The difference of time in the rising of small groups as well as of a company of war strength is, as we have seen, so small that it may be disregarded in discussing the question how large the rushing units should be.

The following, however, are important considerations:

A large body rushing suddenly, as a company of war strength, presents a much larger target and suffers greater losses. At first sight the most suitable thing to do would appear to be to rush, as a rule, with small fronts, preferably with the smallest, the front of a section, and to act exactly as did the Boers in their attack on Spionkop and elsewhere. This mode of attack on the part of the Boers, however, is not directly applicable to our large units without disadvantages.

Where a large unit is engaged, sub-units are limited to a certain extent of front. They must fight as members of one unit; they cannot extend their front as well as did the Boers. The smaller the units designated to carry the attack forward, the more striking becomes the disadvantage and the more difficult becomes the command. The latter, whatever the formation, calls for a prudent and well-trained, brave and bold leader. These qualities we cannot be sure to find outside of the officer or his substitute. Hence from the commander's point of view the platoon of war strength appears the smallest element which promises good work. Otherwise there is no assurance that the points of attack will not be missed or that changes of the tactical situation receive prompt attention. And, above all, it is the presence of the officer that ensures the steady progress of the attack when it begins to become difficult.

It is very properly stated in the "Tactical Retrospects," "When suddenly surrounded by the dangers of war the men at once feel the need of some one to assure them that the situation, however serious it may appear, is all right. They naturally look to the officer. When his cool demeanor reminds them that here as in peace obedience is the first duty, when they see him go forward coolly and boldly, they cease to trouble themselves about reasons. In most cases it is less ambition or patriotism than devotion to his officer that inspires the soldier to the loftiest degree. It would be a great mistake to think that all our men are heroes because sprung from an acknowledged brave race. If every soldier would voluntarily do no more in action than his simple duty, the army would be invincible and would not need tactical instructions."

These words were written under the impression of the victory at Königgrätz by a brave officer of the Army of 1866, whose military career was cut short in 1870 by a heroic death, and I have quoted them here in order not to lay myself open to the charge of pessimism when I deny that it is safe in the attack to let non-commissioned

officers command the greater number of the advancing units. Yet we shall have to do that if we want to advance by sections and half platoons. Hence I am of the opinion that we should most carefully consider how far we may diminish the front of units advancing by rushes, for it seems certain that they must be diminished. Practical experience will quickly show us what is correct.

It is different as regards the duration of the rushes. The British regulations prescribe short rushes of 30 or 40 meters—in fact, however, the British in this war made rushes of from 60 to 100 meters as we do. The information on this point is pretty positive.

In view of the increasing fire effect and of the quick work of the multiloading rifle and quick firing gun the rushes must not be so long as to give the enemy time for deliberate aim. When the stage has been reached where the advance by rushes is unavoidable, I believe that, as a rule, short and very irregular rushes are best on open ground. When far from the enemy they may be longer, but when close to him rushes must be short. For instance, up to 800 meters rushes of 40 meters might be made, at smaller distances not more than 25 meters. From 800 meters down lack of cover will frequently make it necessary to traverse this distance of 25 meters creeping.

Experiments made by several companies furnish the following data:

A rush of 80 meters lasts 26 to 31 seconds.
A rush of 40 meters lasts 17 to 18 seconds.
A rush of 25 meters lasts 10 to 11 seconds.

and the latter distance may be traversed, creeping, in 49 to 60 seconds. In these experiments the rifle was slung from the neck, leaving both hands free for the movement. It is surprising how quickly it can be done with a little practice and how the rapidity of movement increases with practice. Considering that in war, after covering a distance of 25 meters in this manner, halts are made for firing which will probably be much longer than is generally assumed, the repetition of this mode of advance seems perfectly practicable in exceptional cases.

It may be objected that short rushes compel the skirmishers to leave cover more frequently than is necessary with long rushes, and that it is necessary to surmount more frequently the main difficulty of the attack which may so easily frustrate success, *i. e.*, to make the skirmishers leave cover and advance.

Against this the following lesson may be quoted from the Boer War:

The losses in long rushes increase so fast that in most cases the attack breaks down at the midranges under the defenders' rapid fire. To-day an advance by long rushes has no prospect of success. The much smaller losses incident to short rushes diminish the difficulty of getting the skirmishers forward, and are a much better guarantee for the successful consummation of the infantry attack. Lastly, attention should be called to the following feature of the advance by rushes as frequently seen on our drill grounds and in the maneuvers. It arises from a desire to shorten the attack, but is bound to prove disastrous in war:

As soon as a detachment has rushed, it is often immediately followed by the adjoining parts of the skirmish line, before those in front have settled down in the new position and commenced the work with the rifle. That constitutes a voluntary relinquishment of the fire support, the best means to make the attack gain ground.

16. SUMMARY OF THE LESSONS.

It is impossible to discuss any but the most important lessons within the limits of this lecture. There are many other points that are of interest. Thus the important question of better reconnaissance before the attack when near the enemy, the formation of "hunting detachments" organized for that purpose, and of mounted infantry. On this point there are many complaints of British officers about the diminished efficiency of the troops because constantly deprived of their best elements for such special purposes. This effect seems to have been more sensibly felt on the battle fields of South Africa because a larger number of officers and non-commissioned officers were killed or wounded in the middle stages of the attack. As the losses continued to increase and the absence of smoke from the battlefield made troops more sensitive to the unfavorable effects than formerly, there was much complaint because the best men had been detached. There is no doubt that to-day the best men are needed in the skirmish line, whose thorough individual training and general soldierly education enable them to keep their head and to cheer and carry with them the faltering.

The Russian "hunting detachments" certainly have many advantages. They will frequently have the opportunity to kill reconnoitering detachments and patrols of the enemy's cavalry; adroit use of cover will enable them to hang on to the enemy's flank; they are, nevertheless, to be condemned because these advantages are gained at the expense of the efficiency of the troops and interfere with their proper and uniform training. The French have recognized this and done away with the special training of their éclaireurs. While the regulations still contemplate the employment of such detachments the various commands are no longer robbed of their best men, and any platoon or half platoon may be used instead. It seems to me the most effective and simple means for infantry reconnaissance are officers' patrols and creeping patrols sent toward the enemy by the troops first deployed. I do not see any advantage in categorically fixing the limits of reconnaissance as do the new French drill regulations. It is more important to direct battle patrols to such points of the terrain as afford a good view. It might also be considered whether they should not be furnished with good telescopes on folding tripods, and with range finders. These instruments could be carried on the ammunition wagon of the company.

At any rate, it seems to me necessary that the regulations should properly deal with the subject of infantry reconnaissance when close to the enemy in so far as the reconnaissance serves tactical purposes, and that any provisions made to protect the efficiency of the troops must be strictly observed, and that no hunting detachments or mounted infantry are formed of men detached from the front.

The Army has plainly shown that a well-knit body of troops is needed to withstand the surprising effect of modern arms. No man should be taken away from the front without the most cogent reason. For special purposes special troops should be created, otherwise there is no limit to the constant impairment of efficiency.

Organization and preparations for mobilization should constantly co-operate in increasing the efficiency of the infantry and in better adapting its composition to war.

Summarizing the infantry attack as illustrated by war we find that any attempt to carry the attack forward by purely mechanical

motion of co-ordinate troops will fail. Its progress is certain only when it is fighting its way from position to position by toilsome, protracted work with the rifle; it is in this form that the attack is conceived in our drill regulations. Where a good position for firing could not be found, the attack should not have been wrecked by rushing it over the uncovered plain. In such a case a proper position should have been made with the spade under cover of darkness, or the troops should have been halted until success had been gained elsewhere on more favorable ground.

The most important lesson of the Boer War lies in its demonstration to what a premature attack will lead under modern fire effects.

The great weakness of our infantry is the precipitation with which we too frequently unshackle it and drive it forward.

The Boer War proves beyond doubt that the principles of our regulations are excellent. They mean to save us from a cut-and-dried conception of the attack such as cherished by the Englishman when he attacked the enemy with his legs instead of with his rifle.

It is not the "points of similarity" appearing in South Africa between our and the British system of attack that in any way touch the principle laid down for the attack in our regulations; it is the "sprouts" sprung here and there from a mistaken conception of the principles of the regulations. The paragraph dealing with the attack should be made more binding in order that in future the liberty granted therein may not be mistaken for license. In view of the recent war experiences our regulations should be so modified as to accord with the increased fire effect of modern arms.

17. (Left out by translator. Quotes paragraphs of German Drill regulations that should be modified.)

18. CONCLUSION.

The infantry attack of the future must more than ever be individualized in all its parts. It will move onward, here rushing, there lying down, here walking, there running, ever utilizing the ground, carried forward by the supporting fire of well-selected positions and powerful fire wings. The struggle for the superiority of fire will sometimes last for hours without change of position. The attacker who believes he has gained it will often find himself mistaken and compelled to renew his fire.

Tenacity and unyielding perseverance are more apt to gain ground than the impetuous rush. The more carefully and coolly everything has been planned and prepared beforehand, the surer the attack will progress.

The increased fire effect has caused France and Austria to materially modify their infantry regulations in 1901. In the same year Dragomirov gave Russia new regulations for the tactics of all arms. We are fortunate enough not to need new regulations. But we must properly understand the spirit of our regulations; we must continue to adapt its precepts and forms to the increasing fire effect and base our progress on the experiences gathered.

Then the infantry attack will preserve its forceful power, and remain the leader's best means for winning laurels.

GENERAL BULLER'S TESTIMONY.

ONE of the most recent witnesses before the Royal Commission on the South African War, which is sitting in Westminster, was Sir Redvers Buller, who gave some interesting testimony. He said that the loss of the guns at Colenso was due to their being advanced too close to the enemy's position, contrary to his intention. The open nature of the ground and the exhaustion of the men made it impossible to keep them covered after the failure of the attempt to rescue them. In order to rescue them he said he would have had to keep a large body of men under fire all day, and then might not have succeeded without great loss in removing them at night. He also gave explanations of his dispatch of December 15, 1899, to the War Office, in which he declared his view that he "ought to let Ladysmith go and occupy good positions for the defense of South Natal." The expression, he declared, did not imply the surrender of Ladysmith, but the abandonment of the immediate attempt to relieve it. The Fifth Division having been ordered by the Government, without consulting him, to Modder River, he did not then consider that he was strong enough to relieve Ladysmith. It seemed to him that the Government by sending reinforcements in that direction, had committed themselves to a preference for the relief of Kimberley; that it was, therefore, his duty to place before them from a military point of view the measures best suited to meet the situation, leaving it to them to decide how far military considerations should prevail. He also explained his heliogram message to Sir George White on December 16, 1899. He meant that the steps suggested as to making terms, etc., were only to be taken if Sir George White could not hold out for a month. He thought that it would have been quite practicable for the latter to break out and join hands with him, and, although he did not like to ask General White directly to attempt this, he thought that the message might induce him to do so. With regard to Spion Kop, he considered that the action was not without advantage, as his men gained in knowledge of war and in confidence, while great loss both in men and morale was inflicted on the enemy.

THE BURDEN OF THE TROOP-HORSE.

By Hazardzet Fordward.

(*United Service Magazine.*)

THE burden of the troop-horse is a subject which has been much written about and discussed in military circles in more or less general terms. The experiences of each succeeding big campaign have shown clearly enough that horseflesh has its breaking strain, which is reached far more quickly under the conditions of active service than is imagined by those who have had no opportunity of putting it to a practical test; but it required the war in South Africa to really bring home to us what the wastage of horseflesh really means, not only from the point of view of financial loss, but from the far more important ones of strategy and tactics. No student of these operations will deny that, in the whole course

of the war, the horse has been a most important—it might almost be said the most important—factor in the problems which have called for solution. Time after time the condition of the horses has prevented our successes being completed by a satisfactory pursuit; time after time, when rapid movement was all-important, columns have been rendered ingloriously immobile from this cause. And at last it would seem that the "bitter cry" of the over-weighted troop-horse is likely to have some practical effect.

Sentimental reasons apart—for even in these days the omelette cannot be made without an expenditure of eggs—the question of the weight to be carried in future by the troop-horse has forced itself well to the front of the innumerable questions relating to the Cavalry arm which have been raised by our experiences in South Africa. According to the official reports, over 72,000 horses and nearly 40,000 cobs were sent to the Cape during the period from the commencement of hostilities to January, 1901, and the supply has gone on, continuously, ever since. How can this appalling wastage be put down to transport; for, except for artillery, the whole of these horses have been used by the mounted branches; and it is little to be wondered at that our most censorious critics abroad have been compelled to admire the extent of the resources of a country which can go on replacing the casualties, and that from the uttermost ends of the earth.

Now losses in action can almost be disregarded. There has been no cavalry action like that of Bredow's brigade, or of the Prussian Dragoons of the Guards at Mars la Tour, in both of which over 50 per cent. of the horses were killed. Nor has there been anything very similar to the cold which was so largely responsible for the wreck of the remnant of Napoleon's horses which had escaped the earlier phases of the campaign of 1812. Much, no doubt, was due to slow starvation in this as in every other campaign of the past hundred years, and as much to the long sea voyage followed too soon by hard work when out of condition. Other causes have been given—neglect of the simplest precautions from ignorance or carelessness, men sitting in the saddle hour after hour without giving the horse a rest, and so forth. But the factor which probably determines the prejudicial action of all these conditions, and which, alone, is more than sufficient to account for most of the losses, is the habitual and persistent over-weighting of the animal with a dead weight of equipment that is out of all proportion to its power to carry.

Can it be said, then, that we are singular in this respect, and that our extraordinary losses have been caused by our own stupidity? It would appear not. Look round the cavalries of the Continental armies, and it will be found that the same fault is everywhere conspicuous. Only we have had the opportunity of experiencing the results of the mistake, and that under, perhaps, exceptionally trying circumstances; Continental armies have yet to prove it for themselves, unless they learn it second-hand. And as it is the fashion to decry our own Army, a reference to figures may not be out of place—the figures themselves being mostly compiled from the official handbooks of foreign armies.

Take the case of Russia. The regular Cavalry is armed with sword, rifle and bayonet, and each man carries forty rounds of ammunition on his person. On the saddle are two wallets, two saddle-bags, a corn sack with two days' oats and hay, a cloak,

picket post, and (in the case of forty men per squadron) a trenching tool. The man's kit, two days' rations and spare horse-shoes, a horse-blanket, canvas bucket, and a mess-tin are also stowed away on or about the region of the horse's back—and the total weight of these *impedimenta* amounts to 119 lbs.

Considering the way the Cossack is held up to us, especially in India, as the ideal irregular cavalry soldier, it is interesting to note, again, that his pony, too, has to carry no mean weight; in fact, sword, rifle, lance, "Kanjal" saddle, valise, and saddle-bags turn the scale at 97 lbs. Add to this the weight of the trooper and his uniform—which is probably understated at 10 st.—and we find that the Russian troop-horse has to carry 18½ st. and the Cossack pony 17 st. And the field ration is 91 lbs. of oats and 9 lbs. of hay.

Of the other continental cavalries none ride lighter than this. The Austrians admit to 21½ to 22 st.; and, though the weights of various articles of equipment in the French and German armies are not given in the handbooks, they certainly can teach us nothing.

Even the Indian cavalry, which we are always led to regard as "light," is as great a sinner as the rest. The terms used by newspaper correspondents (mostly from imagination) to describe the sowar, "varmint," "wiry," "lean," and the like, scarcely apply to a six-foot Sikh in his prime. According to the "Handbook for Indian Cavalry" (Angelo), the average weight of the men of one well-known corps is 9 st. 5 lbs.; but the weight on the horse in marching order is 19 st. 13 lbs.

It is useless to go on giving examples of the patent fact that every Cavalry in the world is in the same position as ours, the horses crushed under a dead weight which must, in the long run, kill. Whether it is sooner or later, this fact will have to be impressed on them as it has been on us, at bitter cost; meanwhile there is no doubt that that army will have taken a long step in advance of its rivals which first decides to remove the superfluous burden.

It is said often enough that this cannot be done, that the weights represent an irreducible minimum, having regard to the necessities of man and horse. The war has afforded a sufficiently decisive answer to this argument. Of course, so long as it is deemed essential that the Cavalry soldier shall invariably be accompanied by spare clothing and blankets and horse-shoes and nails and other *miscellanea*, so long must he have a proportionately weighty saddle, and so long must his horse—and Cavalry efficiency—be sacrificed to that necessity. If the greater part of these articles are carried in some other way—pack-horses or carts, it matters not which—there is some chance of his horse getting through a campaign without breaking down at the end of the first three months, or less.

If Cavalry is to be Cavalry in future, and not merely Mounted Infantry, as has been prophesied, it is the horse that above all things must be looked to, as the essential factor in the problem. And this being so, every effort must be made to treat the animal not as an automaton or military conveyance,but as a horse.

CAVALRY PIONEERS.

(Translated by Sergt. Kieffer, U. S. A., from La Belgique Militaire.)

IN the *Belgique Militaire* of June 1, 1902, we have expressed the wish, to be realized through the cavalry, to enable it to overcome such obstacles as may oppose it in the execution of strategical movements in the field. We then proposed certain measures to take in order that our squadrons may rapidly effect the constructions and destructions called for in time of war.

La France Militaire of last July took up the same subject. The author of the article "Sapeurs de Cavalerie" predicts the return to the old organization which carried a troop of pioneers to each regiment.

We also gave reasons in opposition to the adoption of our measure —and our arguments stand good as well for France as for Belgium— in favor of the system we have defended here: One brigadier and 12 cavalry pioneers per squadron (3 per troop), 1 troop of engineers (1 officer and 21 men) mounted on bicycles, and 4 small wagons for tools and divers instruments per division of cavalry; in certain special cases a detachment of engineers transported in wagons

Under the First Empire, the Austrian system (1 troop of pioneers to a regiment) worked to perfection. The time of service was not then reduced the same as now; the regiments consisted of excellent cavalrymen, old soldiers who, once made pioneers, remained none the less good cavalry men, whilst the men of the squadrons, used to all sorts of work through continuous campaigning, were in a certain degree good pioneers. Military history of those days abounds with great deeds accomplished by pioneer troops

The actual situation differs altogether and we hope that the writer of *La France Militaire* will recognize that fact and help us to have the system, we proposed, adopted.

But where we fully agree with this French organ is where it demonstrates, by historical example, show many important duties were performed by the pioneers, when they were used at the proper time, and how embarrassing the absence of pioneers with cavalry divisions has been to troops in the field.

In support of these conclusions we extract from *La France Militaire*, the principal paragraphs from a report addressed September 2, 1866, to the Emperor of Austria. General Eidelsheim cites therein a number of instances and places where the pioneers of his division rendered remarkable services.

Making a Slope of Access.—On June 26, after the battle of Suchron, Appel's Cavalry Brigade was cut off on the left bank of the river Ilser. The bank was very steep, and to water the horses it was necessary to lead them to a great distance. The pioneers immediately cut down a slope accessible to the horses, over a distance of 100 meters.

Road Cut Off by Obstructing it with Logs.—On the same day a troop of pioneers of the 10th Hussars, placed as rear guard in advance of the village Gillowey, over the road from Libenon to Turnan, barred the road in two places with abatis, making it temporarily impassable for the enemy.

Destruction of Two Bridges. On June 25 the pioneers of the 1st Regiment Dragoons had to detroy two wooden bridges, 40 meters in length, over the river Ilser; the first was smeared with rosin and burned; the second was taken down piece by piece, the parts cut into and thrown into the river.

Making a Road Across a Swamp.—On the same day the artillery of the division arriving at Brezino, near Münchengratz, could not advance any further on account of swampy ground; a troop of pioneers made very quickly a sort of solid covering over the top with fence rails, permitting the passage of the artillery.

Preparing Roads.—On June 28 Wallis's Cavalry Brigade, as rear guard, covering the retreat, wanted to occupy the village of Samsin and protect the artillery and ammunition wagons of the division. The Brigade could no longer advance on account of the narrowness and bad condition of the road from Dubach to Münchengratz and through the necessity having to cross marshy spots impassable for wagons. The pioneers went at once to work. Those of the 10th Hussars were charged with the widening of the road, those of the 2d Dragoons with covering the road with fagots and wood of ali kind; owing to these rapidly executed works the Brigade effected its retreat in good order without being molested by the enemy.

Opening a Passage Through a Stockade Enclosure.—On July 3d during the battle of Sadowa, the same brigade (Wallis), engaged in a park, found the passage barred by a strong fence made of logs. The pioneers went at it with hatchets and saws and made an opening of 20 inches; this saved the brigade the necessity of working a long detour in order to find an open road.

Works Facilitating a Flank Movement Within Sight of the Enemy.—On July 9 Wallis's Brigade, ordered toward Branzaus, had to execute a flank march, rendered very perilous on account of the proximity of the enemy and having to cross ravines, gulleys and declivities of all kinds. The pioneers of the 1st Dragoons and 10th Hussars never left the head of the column, making trenches and openings without which the wagons could not pass. Notably at Branzaus at the foot of a very steep incline our march was interrupted by the course of the river Igel, — meters wide at that point; in less than one hour and a half a bridge was thrown across, made of supports in the shape of St. Andrew's Cross with all sorts of rope and cramp-iron, and certain places marked with poles where the horses were to cross. On account of the depth of the water these fords were only available through a drain in the river, caused by the current, which lowered considerably its level in places and permitted the passage of the brigade. In consequence of this action, the pioneers of Wallis's Brigade were mentioned in general orders.

Defense of a Village.—On June 26 a detachment of the 9th Hussars, on the retreat, received orders to halt at Sangenbrück and face the enemy. The pioneers of the regiment erected barricades, which were ably defended by the hussars on foot, until the arrival of the enemy's artillery, when they were forced to retreat

Works for the Better Employment of the Artillery—On June 29 Fractrisceou's Brigade, held a position southwest of Gitchin, on a road in the course of clearing, which did not permit the passage and display of the light artillery; the General gave orders to the troops of pioneers of the 5th and 8th Hussars to make the road favorable for any eventuality. Different slopes were opened in the incline of a bridge erected over a current of water running parallel. Owing to this precaution we could, as soon as we learned of the approach of the enemy, bring all our artillery into action.

Work Done Under the Fire of the Enemy's Artillery.—During the same campaign the light artillery of the Division was brought to a

sudden stop in a hollow road with steep slopes, southwest of the road leading from Gitchin to Turnan, in a moment when it was indispensable for it to be at the front to support the troops of the 1st Corps engaged without artillery with the enemy. The two troops of pioneers of the 5th and 8th Hussars went to work under fire and in 40 minutes fixed over the obstacle three *pouceaux* of from 4 to 8 meters, thus permitting the artillery to reach Rybruick in time to take part in the battle.

On the same day Fratrisceou's Brigade, retreating with the artillery of the Division and ordered to reinforce the 1st Corps, found Gitchin encumbered in such a way that a passage there was impossible; the pioneers made at once a road with fagots over large boggy ditches, bordering the road from Rybruick to Stacynisto, and in this way it was possible for the artillery to retreat without losing time.

Opening a Road for the Artillery.—On June 30, at the retreat from Milciones to Smidar, the road was taken up in such a manner by the Saxon Corps that it was impossible to bring forward the batteries of artillery without causing serious trouble. The order having been given to march without delay, the column left the regular road and marched across fields, preceded by the pioneers of the 5th Hussars, who opened a road of nearly one mile long from Milcowes to Hochwesely; owing to these artificial roads (made of fascines or logs) and the *pouceaux* laid over several creeks and ravines, the battery of 4 guns and the cavalry passed over these cut-up and marshy grounds, without having to leave anything behind.

Making a Road Through Marsh for the Artillery.—On July 6 Fratrisceou's Brigade, retreating from Klinska to Kramenicek, had to cross a marshy forest where his artillery sunk in the mire and was held in distress; the pioneers of the 5th and 8th Hussars went to work with a will, covering the soft places with fagots and logs, making a wagon road of more than one kilometer in length.

BISMARCK AND MOLTKE.

(*Paris Correspondence London Daily News.*)

THE late M. Barthélémy-Saint Hilaire who, as secretary of M. Thiers, in October, 1870, and January, 1871, was conversant with the negotiations of the latter at Versailles, in speaking to me of Prince Bismarck, eulogized his "great moderation." The quality that struck him most, he said, in that truly great man was "*sa mesure.*"

Professor Lorens, the close personal friend of the late Emperor Frederick, corroborates the judgment of M. Barthélémy-Saint Hilaire in his recently published book, "William I. and the Foundation of the German Empire." M. Lorens has his information about the wrangles at Versailles direct from the Crown Prince, afterward Emperor Frederick. He applies the mild word "divergencies" to the differences of opinion and the ebullitions of temper that placed Bismarck and Moltke in nothing less than hostile relations to each other. The King and Crown Prince tried in vain to establish a *modus vivendi* that would enable them to work more smoothly together, and secure unity of command. Frederick wrote to his friend: "If I do not reconcile them the quarrel will widen as the

war goes on. Each constantly comes to the King with complaints of the other. Their disagreements have bad consequences. Instead of being able to decide with the extreme rapidity the situation requires, the King is obliged, before he can do anything, to smooth the differences between Bismarck and Moltke. In order to reconcile them he has to write a letter to each and this is a cause of loss of time. Should he not take this precaution before bringing them together, they would not meet in Council but to wrangle and recriminate. The only way to put an end to their jars in such a case is to defer taking a decision."

The scenes that Frederick spoke of were of daily occurrence. Bismarck lost all patience because he had to seek in the newspapers for information about the plans of Moltke. The latter on his side expressed annoyance at the impertinent curiosity of Bismarck, who wanted to be informed of his plans before they had been submitted to the King. The situation became so tense owing to these divergencies that nobody ventured to have an opinion about them or to in any way interfere.

The proclamation of the German Empire in the Gallery of the Mirrors at Versailles approached, and princes kept arriving from Germany to be present at it. The Crown Prince felt that something must be done to allay the strife and present a united front. He began by sounding Bismarck through a friend, who brought back this ultimatum: "The Chancellor thinks it necessary that he should be present at all military councils of importance." Next day at dinner the Prince made overtures to Moltke on this point, begged him to be more conciliatory toward Bismarck, and dwelt on the consideration that once Paris surrendered the direction of affairs must subordinate military operations to political considerations. Moltke would not listen to the Prince, and kept on saying that Bismarck wanted to meddle with affairs that did not concern him. He had quite recently received a rude letter from Bismarck. The Crown Prince offered his mediation, Moltke, with a military attitude, drew himself up, and answered in the military term: "I obey orders."

The Prince then invited Bismarck to meet Moltke at dinner. He accepted the invitation, but spoke with bitterness about the treatment he had met with from Moltke and the general staff. This did not discourage the Prince. Moltke arrived punctually at the time named, Bismarck half an hour later.

When all were at table the Prince asked what they would do with Paris when it capitulated, and under what conditions they would continue the war. Bismarck took on himself to answer, and declared that advantage should be taken of the fall of Paris to sign an advantageous peace. "If they (the German general staff) had listened to me, our armies would have never come further west than Champagne. I always was against the march on Paris, and consider it a great mistake. It has given this war a peculiar character, and placed us in a situation the end of which none of us can foresee. In my opinion, the moment Paris capitulates we should conclude a peace."

Moltke, usually so hard to move, was boiling over with anger, but did not attempt to interrupt the Chancellor. When the latter left off speaking, Moltke begged leave to differ. "I think," he said, "that to conclude peace would be as unpardonable a mistake as not to have marched on Paris. Once the capital falls, we should continue military operations with the utmost energy. The capitula-

tion will not secure peace. On the contrary, we shall never be certain of peace until the last resources of France are exhausted."

Bismarck was asked who had authority to sign a peace. He returned that he had so arranged that once Paris capitulated, he would find a qualified party. He had been in negotiations with the Emperor Napoleon at Wilhelmshöhe and with the Empress Eugénie at Chislehurst, and with the result that the Empress declared herself ready to treat on condition that she was to be accepted a Regent, and afforded the means of establishing herself in that capacity in France. The agent of the Empress in the negotiations was M. Clement Duvernois, a member of the Cabinet that fell with the Empire on the 4th of September. At the moment Bismarck was speaking, Duvernois was at Wilhelmshöhe to bring the Emperor into this plan. Bismarck protested that he did not want to set up the fallen dynasty, but only to use it as a convenience by enabling the Empress to return to France, take up a foothold, and launch an address to the Imperialists. Her regency was still technically valid, and so far the only regular Government with which the Germans could treat. The Corps Legislatif and Senate had also a legal existence, though dissolved in a revolution. They and the Empress Regent might be expected to sign a treaty of peace. When the Germans had what they wanted, they would see no harm in letting the French turn her off.

Moltke listened in silence to these revelations. He asked Bismarck, when he had done speaking, whether, in his opinion, the German Army should enter Paris. "No;" and after a moment of reflection, "I think it quite useless to let our troops enter, and, above all, to let the King enter." Moltke having raised an objection, Bismarck, firing up, said: "It would be an awful mistake to bring Paris within the lines that are to be occupied by our troops." This visibly nettled the old warrior. The Prince interfered to calm his wounded dignity. But when the party left the dining-room Moltke flew out, and declared that he would never cease to act according to his own opinion, and was not going to let himself be influenced by the contrary views of Bismarck.

The relations between the Crown Prince and his father were not smooth during the greater part of the time they were at Versailles, but improved toward the end. Bismarck comes out in the work of Professor Lorens as a far-sighted statesman with a rough temper and a thin skin, but worthy of the confidence his master placed in him. It is also to be observed that however annoyed by the military party, however goaded by their attacks, he never allowed his anger to influence his mind.

OLD FORT LARAMIE.

(*St. Louis Globe-Democrat.*)

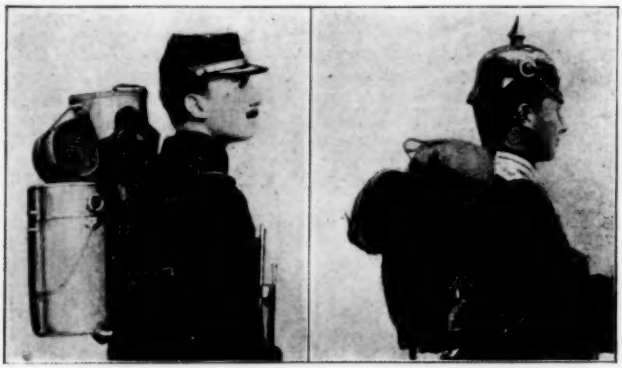
THE opening of the Fort Laramie reservation, which was dealt with by an act passed at the recent session of Congress, will recall to the memory a landmark which hundreds still living saw and which tens of thousands still alive knew in the Indian stories of a third or a half a century ago. Fort Laramie, situated in the eastern part of the present Wyoming, on Laramie River, close to its entrance into the North Platte, was built in 1834.

FORT LARAMIE, 1848.

by William L. Sublette, of St. Louis, and Robert Campbell, well-known fur dealers of their day, had several names and several successive owners, was bought by the Government in 1849, was garrisoned many years as a protection to immigrants passing through that region, but was abandoned when the appearance of the railroads and the disappearance of the Indians in their savage state abolished its occupation. It was the best-known frontier post, fur trading or army, of the old days of the Santa Fé, Oregon, California and Salt Lake trails, except Fort Leavenworth or Bent's Fort, on the Arkansas.

Fort Laramie was familiar to everybody who in the 40s, 50s or 60s of the recent century traversed the Oregon or Salt Lake trails. Over in the western end of the present Wyoming Jim Bridger built a fur trading post in 1842, on Black's fork of the Green River. On the Oregon trail between these two points, but a little nearer to Bridger than to Laramie, at an opening separating the Sweet Water from the Wind River Mountains, sections of the great Rocky Mountain chain, stood the South Pass, the gateway to the Pacific slope. Through that portal—made known popularly to the world through Fremont's report of his exploration of 1842, which had been visited by many other white persons long before Fremont's time, including Dr. Marcus Whitman and the Rev. H. H. Spalding and their wives in 1836, and which was probably traversed for the first time by white men when some of Andrew Henry's trappers went through it in 1824—passed most of the human tide which surged from the east and the Mississippi valley into the present States of Oregon, Washington and California by the overland route in the early days. Most persons who went over the Oregon, Salt Lake and California trails knew Fort Laramie. Beyond it, on the western course, the mountainous region began. It was the last fitting-out place of importance until the continental divide was passed.

Fremont, who visited it in his exploration of 1842, gives a good description of Fort Laramie in his report. One of the other things which Fremont did in that report was to destroy that myth of a great American desert, which was based on the reports of Pike, Long, and one or two of Irving's books. Fremont made a careful record of distances between fording places in rivers, pointed out good places in which to camp, showed that cattle could thrive on the alleged American desert, and mentioned the physical advantages of the location of Laramie as a fur trading post on the route of immigration toward the Pacific slope. The most vivid pictures in Parkman's *Oregon Trail* are those of Fort Laramie, as he saw it in 1846. Writers of Indian tales from Fremont's and Parkman's time often made this post a prominent rallying point in their stories. It was the centre of many romantic and tragic events in the history of the frontier, some of them more remarkable even than the story writers of its day located in and around it. It was the site of a reservation for many years, and this, too, is soon to disappear. Fort Laramie has dropped out with the buffalo and the Indian, but the passing of the reservation at that point will recall to the memory of the few survivors of those who saw it in its great days and to the memory of many thousands of those who read of it when it was the centre of the wild life of the plains, one of the most interesting of all the landmarks of the vanished western frontier.



THE FOOT-SOLDIER'S BURDEN.

(*L'Armée et Marine.*)

PREFACING a new book, General Dumont, of the French Army, says our small foot-soldier carries in the field one-third of the load of a mule; it is really absurd and inhuman, and its consequences are disastrous.

Commandant Lavisse, aware of the importance to reduce the load of the Infantry soldier and to perfect the field equipments, has collected for the guidance of the War Department patterns of all equipments and armaments from the best armies of the world, and compares them with those of our troops. These comparisons, from a practical standpoint, are contained in his book.

In field-dress, our foot-soldiers carry 27 kilos; our Alpins, 33; it is excessive, even for the strongest soldiers. Under such a weight the most vigorous will march heavy and slow; in time of war, those less robust, will be found worn out and demoralized, at the tail end of the column.

It is evident that if a man of medium strength can march 25 to 28 kilometers with a load not exceeding 22 kilos, he will feel under a weight of 27 kilos so fatigued, and his organism in such a condition, that one night's rest will not suffice to put him in trim for next day's march; with 31 kilos the body is overstrained, and will gradually lose its strength.

After the knapsack, Commandant Lavisse indicates certain improvements to be made in the uniform. Besides, he explains why certain colors in dress, such as white, yellow or red should be abolished. You will find in all modern armies but three articles of clothing of red color: the trousers and kepi of the French, the trousers of the Spanish. Our red kepi is like a sponge—absorbing water—and a regular target on the head of our troops; it should be replaced by a helmet of less gaudy colors, with two visors.

After the uniforms he cites the equipments. The author proposes to modify them to insure a better distribution of the weight on the back of the soldier.

Why also hold on to the equipments made of black leather, when it takes so much time in cleaning them with blacking, etc., which in rainy weather soils everything with which it comes in contact? Tan is certainly preferable.

At last, these bright mess-pans, packed on top of the knapsack, are also considerable of a target, interfere on account of their weight and bulk with the free and easy movement of the soldier, and should be replaced by individual utensils, made of aluminum—blackened—which would make them light and less showy.

"These patient and intelligent investigations," says General Dumont in conclusion, "are of the greatest interest, and the numerous reforms recommended by Commandant Lavisse will, if adopted, be a real improvement in the dress and equipment of our Infantry."

UNITED STATES INFANTRY.

A similar subject is, according to the *N. Y. Times*, attracting attention in the United States:

"The military authorities are striving to adopt means of reducing the weight carried by the infantry soldier on the march without interfering with his efficiency or his comfort. Experiments have been made to obtain an intrenching tool. Owing to the long-range arms now in use, it is regarded as imperative that the Army should be supplied with a suitable tool for constructing a hasty cover for the individual soldier or for a line of troops exposed to an enemy's fire. The Engineer School has been called upon to submit samples combining the qualities of bayonet, knife, and intrenching tool.

"In this connection it is interesting to note that the aggregate weight carried by the individual infantryman in heavy marching order is 76 pounds. This is distributed as follows:

"Clothing on person, 11 pounds 1¼ ounces; rifle and equipments, 26 pounds, 14¾ ounces; haversack and contents, 9 pounds, 10½ ounces; canteen, tin cup, etc., 1 pound, 8½ ounces; three pints of water, 3 pounds, and blanket, pack and clothing, 24 pounds, 12 ounces."

THE UNITED STATES ARMY IN THE YEAR 1801.

(Contributed by Major A. D. Schenck, Artillery Corps.)

A GENERAL return of the Army of the United States showing the effective strength of the General Staff and of each Regiment and Corps, and also the number wanting in each grade, to complete the military establishment:

General Staff Officers.—One Brigadier General, 1 Quartermaster General, 1 Paymaster General, 1 Inspector of the Army, 1 Inspector of the Artillery, 1 Division Quartermaster, 2 Brigade Inspectors, 1 Aide de Camp, 1 Judge Advocate. Total, 10.

First Regiment Artillerists and Engineers:—One Lieutenant Colonel Commandant, 4 Majors, 16 Captains, 27 First Lieutenants, 1 Paymaster, 1 Quartermaster, 1 Adjutant, 1 Surgeon, 2 Surgeon's Mates, 3 Cadets, 3 Sergeant Majors, 2 Quartermaster Sergeants, 1 Senior Musician, 40 Sergeants, 43 Corporals, 13 Drummers, 9 Fifers, 57 Artificers, 469 Privates. Total, 694.

Second Regiment Artillerists and Engineers.—Four Majors, 14 Captains, 25 First Lieutenants, 1 Paymaster, 1 Quartermaster, 1 Adjutant, 1 Surgeon, 2 Surgeon's Mates, 6 Cadets, 2 Sergeant Majors, 3 Quartermaster Sergeants, 57 Sergeants, 52 Corporals, 8 Drummers, 3 Fifers, 77 Artificers, 667 Privates. Total, 926.

First Regiment Infantry.—One Lieutenant Colonel Commandant, 2 Majors, 9 Captains, 7 First Lieutenants, 8 Second Lieutenants, 1 Paymaster, 1 Quartermaster, 1 Adjutant, 1 Surgeon, 1 Surgeon's Mate, 2 Sergeant Majors, 2 Quartermaster Sergeants, 32 Sergeants, 25 Corporals, 9 Drummers, 8 Fifers, 392 Privates. Total, 502.

Second Regiment Infantry.—Two Majors, 10 Captains, 9 First Lieutenants, 8 Second Lieutenants, 1 Paymaster, 1 Quartermaster, 1 Adjutant, 1 Surgeon, 1 Surgeon's Mate, 2 Sergeant Majors, 2 Quartermaster Sergeants, 3 Senior Musicians, 39 Sergeants, 38 Corporals, 10 Drummers, 10 Fifers, 549 Privates. Total, 686.

Third Regiment Infantry.—One Lieutenant Colonel Commandant, 1 Major, 8 Captains, 10 First Lieutenants, 8 Second Lieutenants, 1 Paymaster, 1 Quartermaster, 1 Adjutant, 1 Surgeon, 1 Sergeant Major, 2 Senior Musicians, 26 Sergeants, 24 Corporals, 7 Drummers, 7 Fifers, 399 Privates. Total, 498.

Fourth Regiment Infantry.—One Lieutenant Colonel Commandant, 2 Majors, 9 Captains, 9 First Lieutenants, 7 Second Lieutenants, 1 Paymaster, 1 Quartermaster, 1 Adjutant, 1 Surgeon, 1 Surgeon's Mate, 2 Sergeant Majors, 2 Quartermaster Sergeants, 33 Sergeants, 32 Corporals, 12 Drummers, 9 Fifers, 503 Privates. Total, 625.

Aggregate of the present Military establishment, 4,051.

Wanting to Complete the Establishment.—One Inspector of Fortifications, 2 Brigade Quartermasters, 1 Lieutenant Colonel Commandant, 1 Major, 5 Corporals, 17 First Lieutenants, 11 Second Lieutenants, 5 Surgeon's Mates, 97 Cadets, 4 Sergeant Majors, 5 Quartermaster Sergeants, 5 Senior Musicians, 62 Sergeants, 74 Corporals, 3 Fifers, 1 Trumpeter, 124 Artificers, 975 Privates. Total, 1,384. Grand total, 5,488. Total Privates, 4,040.

DECEMBER 19, 1801.

THE NEW RIFLE FOR THE BRITISH ARMY.

(*Scientific American.*)

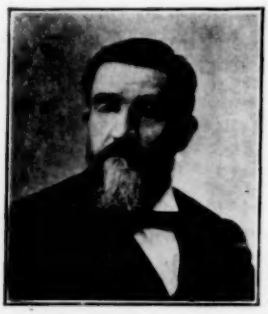
THE rearming of the British army with a new rifle is to be carried out at once, and all the plants at the various government arsenals are to be transformed with all possible dispatch to manufacture the new weapon. The transition is a sudden one, and all work upon the present type of rifle is stopped and the products abandoned. The new arm to be adopted is known officially as the "Lee-Enfield Modified," and therein are incorporated many improvements and advantages. The weapon is five inches shorter than the Lee-Enfield rifle at present in use, which will result in an appreciable reduction of weight. In fact, the weapon may most aptly be described as a compromise between a rifle and a carbine. Another feature is that the barrel is inclosed in a wooden casing throughout its entire length up to within an inch of the nozzle. In the present Lee-Enfield rifle there is a small wooden grip for the left hand, to afford protection from the heat of the barrel generated by rapid and continued firing, but the experiences of the Boer War proved that

this protection is quite inadequate. The provision of this wooden casing on the barrel has necessitated an alteration in the device for fixing the bayonet. A nose cap is to be fitted, to which the bayonet is to be attached. There are several other modifications in the weapon the most important of which is that at about ten inches from the nozzle of the rifle the bore is very slightly enlarged, and the enlargement continues right up to the nozzle. By this arrangement greater velocity of the projectile will be obtained, since at the point where the bore commences to increase, the force of the explosion of the cartridge has been expended, while if the bore continues to be the same diameter thereafter to the muzzle, the tight barrel means increased friction and reduction of velocity, whereas by enlarging the bore a very small fraction of an inch, the friction will be reduced and increased velocity obtained.

By diminishing the length of the barrel, however, the back and fore sights are brought closer together, which arrangement will entail greater care in taking aim, since the possible angle of error will be greatly increased. The back sight also is different from that at present in vogue, and is in fact the only part of the weapon which projects above the wooden casing. The flap is large, and is capable of adjustment up to a considerable range without being raised. The mechanism of the weapon is much simpler than the existing rifle, while the number of parts is less, which renders the arm less liable to derangement. The magazine, which will be completely concealed within the stock, will still carry ten cartridges, as is the case with the Lee-Enfield; but instead of loading the magazine by hand, as is now the practice, and which is very unsatisfactory and slow, a clip will be employed as in the Mauser rifle. Altogether, the new arm is claimed to be superior in every way to any other rifle at present in use.

Reviews and Exchanges.

General DeWet.



GENERAL DE WET.

THERE has been considerable guessing whether Briton and Boer would ever dwell together in unity in South Africa. It cannot be denied that in the past numerous causes existed for mutual dislike. To-day there exists a better understanding. The war has cleared the atmosphere, the government is no longer one that can be bullied, the Boer has met and knows now the true Englishman, and he has exacted for himself that measure of respect to which he is entitled, and which was heretofore denied him. The Boers are a sterling race, and whatever peculiarities their isolation and surroundings may have developed, they do in no way abridge that fact. It is worth while for Great Britain to gain and retain the loyalty and friendship of the Boers. It is not necessary to dwell on what might be if she did not, it is sufficient to know that loyalty and friendship on the part of the Boers will cement the whole of South Africa into one homogeneous empire, that the Boer is the hardiest pioneer that ever trod wilderness, and who will help to settle and people that vast, for the most part undeveloped domain, and that so long as he is loyal and friendly the safety of the British dominion in South Africa is absolutely unquestioned.

This friendship of the Boers, so desirable for Great Britain, will have to be won through the same men who led them in the late war, and the true friends of the Boers will learn with much pleasure from General DeWet's pen that he for one does not intend to waste his good people on impossibilities, that he will abide by the results of the war and help in repairing the damage.

General DeWet is certainly one of the most striking characters of the war. His state had no direct quarrel with Great Britain, it joined the Transvaal from sympathy engendered by community of race, and never was ally more faithful. When the signs of the time

pointed to war, DeWet took the field like the rest of the burghers of his district, and no one could have then foretold what a brilliant and phenomenal career was in store for him. He was not quite unknown among his fellow burghers, for they had elected him a member of the legislature. Compactly knit, above medium stature, with a severe look and strong jaw, reserved in manner, he at once gave the impression that he meant business and was a leader of men, though he may have been dressed in rough farmer's clothes, cowhide boots, and a little round black hat, as the writer saw him at Poplar Grove, Sanna's Post and other places. Absolutely fearless himself, a tireless horseman, inured to the hardships of the field, knowing the whole of his state like his inside pocket, an intrepid, circumspect, sagacious leader, he rode at the head of his Boers, and no wonder they followed him. When confronting the enemy a glance sufficed to show him what to do and where to strike; he always knew what to do; was always doing something or busily preparing to do something; his activity was ceaseless, his resourcefulness inexhaustible, his spirit buoyant and unbroken to the last.

He is to-day the great hero and idol of his people, and the modesty and reserve permeating his book are as becoming to the soldier as the conciliatory spirit and absence of rancor must be to Mr. Chamberlain.

In following his career, as all too briefly recounted by him, the reader becomes aware at once that the record is based on scant notes. Many dates need to be supplied to insure greater clearness.

We, however, have DeWet's own explanation, for he says somewhere in his book that General Knox of the British Army was unduly anxious to make his acquaintance and most annoying in his attentions. We are afraid he deprived General DeWet of much pleasure that might have been advantageously bestowed upon the diary.

Burgher DeWet had hardly reached the Natal frontier with his command when he was elected Vice Commandant. In that capacity he took a conspicuous part in the affair at Nicholson's Neck, where with the help of 200 of his burghers actively engaged, he greatly damaged the enemy and took from him 800 prisoners, four guns and all sorts of small arms and ammunition. Here at the very beginning we bring up against the white flag business. DeWet tells us that after hoisting the white flag the British reopened fire; he learned afterwards that it was due to a misunderstanding, and willingly accepted the explanation. In consequence he has little to say about the matter, which is quite in keeping with the unwillingness, personally known to the writer, of the Boers to attribute the apparent misuse of the white flag on the part of their enemies to wilfulness. We have read much about violation of the laws of war, etc., on the part of the Boers; news of that kind became scarce as soon as the British army dispensed with its so-called war correspondents and did its own reporting.

Soon after Nicholson's Neck DeWet was appointed Vechtgeneraal, withdrawn from Natal, and ordered to the western frontier. When he arrived there, Colenso, Colesburg and Stormberg had been fought. General Piet Cronje was still at Magersfontein where he had inflicted a bloody repulse on the enemy. The British were at Modder River. DeWet saw at once that the proper thing to do was to wreck the enemy's railway; sluggish Cronje, however, would have none of it and stayed inactive at Magersfontein while Lord Roberts was marshalling the host with which he shortly overwhelmed Cronje and won the only

decisive victory of the war. DeWet characterizes himself well when in speaking of the war as waged by the Boers, he says: "To oppose successfully such bodies of men as our burghers had to meet during the war demanded rapidity of action more than anything else. We had to be quick at fighting, quick at reconnoitering, quick (if it became necessary) at flying." We can readily imagine how the active tireless DeWet chafed under the fatal inaction of his chief.

When Lord Roberts began to move, however, DeWet found plenty of work, for Cronje sent him to check General French at the Koodoesberg, which he did, whereupon he was promptly dispatched to the other flank to check another column.

This proved to consist of the greater part of the British army, so he prudently hung around its flanks and managed to capture a large provision train which Lord Roberts could ill-afford to lose. After seeing his booty started toward a place of safety DeWet learned of Cronje's retreat, and started at once to join his chief at Paardeberg, where he found him already enfolded by the British army. It did not take DeWet long to size up the situation, he promptly drove the British from parts of their positions on the left bank of the Modder to open a way for Cronje. "Our arrival on the previous day had made a way of escape for General Cronje. It is true that he should have been obliged to leave everything behind him, but he and his burghers would have got away in safety. The British had retreated before our advance, thus opening a road between us and the laager. That road was made yet wider by the fire from our guns. But General Cronje would not move."

After desperate efforts to keep Cronje's last loophole open, DeWet was driven off by greatly superior forces and barely escaped. "The English had very speedily taken up positions to the right and left, with guns and Maxims, and for a good nine miles of our retreat we were under their fire. Notwithstanding the fact that during the whole of this time we were also harassed by small arms fire, we lost—incredible as it may appear—not more than one killed and one wounded, and a few horses besides." This experience no doubt bore fruit when later on we see him pass through the lines of blockhouses or gallop twice through the fortified pass of Springhaan's Neck under the enemy's concentrated fire.

After Cronje's surrender DeWet was made Vice-Commander-in-Chief and placed in command of the troops dispatched to the western frontier to stem the tide of invasion. The best soldier of the Free State was now in command and in position to display all his talents, but alas, conditions had been greatly changed by Cronje's surrender, a general panic had seized upon the Boers, Ladysmith was relieved, the British troops were crossing the southern border of the Free State, and the Boers had no longer confidence in themselves.

With his force of 2,500 men DeWet took up a position at Poplar Grove which Lord Roberts turned on March 7, and he describes his retreat from the position as a rout. Three days later at Abraham's Kraal, the Boers, or rather a small minority of them, made a gallant stand until evening, when their ammunition was exhausted. Bloemfontein fell into the enemy's hands without further resistance worth mentioning, and DeWet allowed his Boers to go to their farms to recuperate. The British, for the time being, were likewise unable to advance. Meanwhile the Boer leaders took counsel and determined upon an offensive warfare unencumbered by wagon trains. Here begins the most brilliant part of

DeWet's career. His first exploit under the new order of things was the affair of Sanna's Post, which, though it was a brilliant success, he describes with great modesty. He says that the confusion of his large capture of prisoners, guns, and wagon train gave him much trouble; but he was a hustler, the writer saw the prisoners marched off while the fleeing enemy were still in sight, and half an hour after the action the captured guns and wagons had also moved off, and nothing remained to indicate the late struggle except a few broken wagons and dead animals.

Having cleaned up the right flank DeWet bethought himself of inspecting the enemy's rear, and started southward to reconnoiter. Finding a British column marching westward for the railroad, he sent back for his troops and bagged 700 of the enemy at Mostertsshoek on April 4, 1900. Going further south he ran against Dalgety's column of 1,600 men, of which the Cape Mounted Rifles formed part. He kept them invested for sixteen days in the vain hope of bagging them also. He takes pains to express his lack of admiration for the Cape Mounted Rifles, and later on he carefully states when and where he baffled or broke through that particular body of troops. Instead of wasting sixteen precious days on a body of troops for whom he had no admiration, DeWet might have rendered his country more efficient service by turning from Mostertsshoek southwestward and wrecking Lord Roberts' only railway. He stuck to Dalgety, however, until the arrival of large British reinforcements made it unsafe to tarry longer, and he had a narrow escape.

The Boers now took up positions on the British right flank near Thabanchu, and it took the British until early in May to drive them away before the well-prepared march to Kroonstad and Pretoria could begin.

When the Transvaalers retreated into their own country, DeWet with his burghers remained in the Free State, in flank and rear of the enemy and with unlimited elbow room for raiding. On June 7 he swooped down on Roodewaal station and captured nearly four million dollars' worth of supplies, and many prisoners, also much ammunition, which he promptly buried at a convenient spot. The messenger who brought the news of this success to the Transvaal Government at Machadodorp stated that nearly every Free Stater engaged in that affair was now equipped with one of Zeiss's latest trieders. This capture stirred up the British, DeWet scurried away, marching one way in the daytime and another at night, and doubling back and nearly catching Kitchener himself.

That general had taken the field in person, and now camped on DeWet's trail, compelling him after several lively brushes to take refuge in the Roodeberge, a range of mountains forming a salient protruding from Basutoland into the Free State. The British occupied all the passes, still DeWet found an unoccupied one and went away quietly with 2,500 men and 460 wagons. After his departure a deposed general had himself re-elected and then surrendered his whole outfit to the British; many of the burghers were displeased, and instead of surrendering they made their escape and rejoined their own comrades in the field. The British on their side kept hot on DeWet's trail, expecting to catch him in crossing the railroad. But DeWet crossed not only unhindered, but captured a railroad train.

Converging British columns now drove him to the Vaal River, whose crossings were being occupied by British troops from the

north. DeWet managed to cross by the most frequented ford, and made his escape to the northwest of Pretoria, whence his wagon train reached safely in the Waterberg district. President Stein who had accompanied DeWet went by a detour through the bushfield to pay the Transvaal government a visit, and DeWet, with 246 horsemen started back for the Free State. On the return march he found the Klerksdorp-Pretoria railway unguarded: "To my vexation I had not a single cartridge of dynamite or any implements at hand with which I could wreck the line." To leave the railroad undamaged was for him most irregular. So after reaching Free State soil he quietly recrossed to Potcheftstrom and got a supply of dynamite. "I left Captain Scheepers behind me with orders to wreck the line every night." The faithful Captain reported some time later that he wrecked the line regularly every day for four or five weeks.

DeWet immediately decided to have some of that sport himself on a larger scale, and tells how he did it with twenty-five charges of dynamite while the enemy's bullets were flying about his ears, and winds up, "the bridge I had destroyed had been rebuilt, so I was forced to burn it again."

DeWet now made for the northern part of the Free State, and before long had a large force of the enemy looking for him. He crossed and wrecked the railroad and made his escape to the Vaal River, where the enemy gave up the pursuit Oct. 7th. After some marching and countermarching to deceive the enemy, he suddenly joined hands with General Liebenberg from the Transvaal and swooped down on General Barton, whom he shut up at Fredericksstad station. Lack of proper coöperation on the part of the Boers, and large English reinforcements, made the undertaking unsuccessful, and DeWet had to let go of his prey. The enemy now took a fall out of him, surprised him near Bothaville and took six Krupp guns and a hundred prisoners from him.

Believing a change of surroundings a proper thing, DeWet now decided to invade the Cape Colony; on the march "we wrecked the railroad and blew up a few bridges;" with his whole force he galloped through the fortifications of Springhaansneck with only one man hit, who had been previously wounded and was riding in a carriage. He marched past Dewetsdorp in full view of the enemy in order to deceive him, and came back that night, surrounded the town and compelled the garrison to surrender on April 23d. When DeWet started on this march he had but one Krupp gun and sixteen rounds of ammunition left, of which he expended six rounds at Springhaansneck, and now at Dewetsdorp he captured two British guns with a plentiful supply of ammunition.

The British reinforcements, though late, proved formidable, so, leaving a few burghers to deceive the British, DeWet slipped away to the south where General Knox was marching against him with converging columns. Before long he found himself with exhausted horses between the Caledon and Orange Rivers, both bankful and unfordable, with all crossings held by the enemy, and large forces concentrating all around him. Nevertheless, DeWet managed to slip through at the unguarded and practicable ford of Zwavelfontein; his troubles, however, were not yet over, General Knox was anxious to prevent DeWet from invading the colony, and now made every effort to drive him to the north. The Boer leader turned to the west and to the east, only to meet the enemy's columns everywhere,

and nothing remained to him but to run the gauntlet of Springhaansneck once more. He sent three hundred men in advance to break through and take up a position on the farther side in order to hold back any British reinforcements, and then he himself swept through the pass with his 8,000 men over 3,000 paces of open ground swept by fire from both sides, without losing a man.

After unearthing the ammunition buried near Roodewal, and hitting right and left to keep elbow room, DeWet again started to invade Cape Colony, and succeeded. The British were on his heels immediately. In a brush with them near Tabaksberg he took a Maxim-Nordenfelt from them, and once more set his face against the fortified line from Bloemfontein to Thabanchu, misleading General Knox by sending a detachment toward Springhaansneck and with the captured Maxim-Nordenfelt opening a way for himself through the enemy west of Thabanchu, with the loss of one wounded. General Knox immediately put his troops on trains to forestall DeWet on the southern frontier, but that wily leader deceived him by spreading false rumors and demonstrations eastward, captured a railroad train loaded with valuable booty, and crossed without further trouble into Cape Colony between Norwals Pont and Hopetown. In this new country, however, the elements and everything else turned against him, and his experience there would have disheartened a less stout-hearted leader. After eluding the enemy several times he regained the right bank of the Orange River in an exhausted condition. "A fearful experience we had had," he says, and after reading his account one cannot but agree with him. He proceeded immediately to the northern part of the Free State, blowing up the railroad near Brandfort, and distributed his troops over the State so as to keep the British busy everywhere.

Thinking that the enemy would give him more rest if he separated himself from President Stein, DeWet gave him a small bodyguard and sent him to what he believed to be a safe place, but it was not long before the President came near being captured, on which occasion most of the members of the Cabinet fell into the enemy's hands.

The Middleburg negotiations began in the first half of the year, but led to no settlement, and on August 7th Lord Kitchener published a proclamation threatening all Boer officers who should fail to surrender before September 15, with perpetual banishment from South Africa. This proclamation does not seem to have given DeWet much worry, for he says, "It would have been childish to fear that letter and proclamation."

Instead of operating with one large body under DeWet, each commando now operated in its own district. This mode of warfare evoked terrible retribution from the British. "Our tactics of dividing our commandos and thus keeping the English busy in every part of the Free State, or where they were too numerous for us, of refusing to allow them to give us battle, so enraged them that they no longer spared the farmhouses in the north and northwestern districts. Even in the south and southwest many of the houses were wrecked, but the work of destruction was not carried out with the same completeness as in the aforementioned districts. The enemy moreover did not spare the cattle, but either drove them off or killed them for food. As for our womenfolk, any of them who fell into the hands of the enemy were sent off to the concentration camps."

The British made a wilderness of the country, and the Boers began to be hard up in every way; they still had some corn and cattle, coffee and sugar they had not tasted for a long time; they could not replace their worn-out clothing because the British not only destroyed all male clothing found on the farms, but all the hides which the Boer women were tanning for the men to mend their clothes with.

This enraged the Boers, and they now invariably stripped their prisoners of shoes and outer clothing.

Moreover the British covered the country with lines of blockhouses and wire fences of which, however, DeWet expresses himself most contemptuously, for he had never any trouble in crossing them. What gave him more concern was that the British began to arm and employ loyal Boers as scouts, under whose guidance the British waged a most effective warfare chiefly by means of night marches and night attacks. DeWet of course has nothing good to say of these traitors to his cause, and expresses himself freely on the subject though his own brother had become one of the National scouts.

During the greater part of 1901 DeWet has not much to report of himself, it was a detachment war carried on locally, the British measures were effective, and the efforts of the Boers became feebler and feebler. About November 1st, however, DeWet got together 700 men, and toward the end of the month attempted to capture a British force which was pursuing a large laager of women and children.

During the night the British slipped away from him in considerable hurry, abandoning some transportation and supplies.

In the early part of December he laid an ambush for a British convoy, but when it came to attacking, his burghers hung back, and his beautiful scheme came to nothing. He now decided to capture Colonel Firman's command, then building blockhouses, and late in December he assailed his camp on a hill at Tweefontein, inflicting a considerable loss and capturing numerous prisoners and valuable booty. This last stroke brought out the British in great force. Before many days he had to abandon the two guns captured at Tweefontein, and now found himself confronted by an immense force, estimated by him at 60,000 men. "The forces of the enemy between Harrismith and Vrede had formed a line extending from the Harrismith-Bethlem blockhouses to the blockhouses between Vrede, Frankfort and Heilbron. And now the troops were advancing in close contact with each other hoping thus to force us against one or other line of blockhouses. The intention of the enemy appeared to be to drive us against the Heilbron-Kronstad blockhouses and the railway line." DeWet found a way through the line of blockhouses and got 600 head of cattle through, but a number of Boers were taken in this "drive." A few days later DeWet forced his way back through the line of blockhouses, on which occasion a little boy was killed and another wounded. In February the British arranged another big drive, captured many Boers and all of their remaining cattle, but DeWet with his faithful band got away. The end, however, was in sight.

As the northeast began to be very unhealthy country for DeWet and President Stein, they decided to try the west. President Stein wanted to consult one of their surgeons in the Transvaal, and after taking him there in safety, DeWet crossed back into the Free State,

making for the vicinity of Boshof. He made his way through two more lines of blockhouses, "white elephants" he calls them, and was then overtaken by news of the negotiations which ended in final peace.

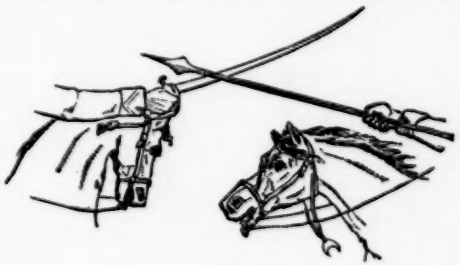
Such briefly is the story of General DeWet as modestly told by himself.* In speaking of other features of the war he defends the burghers who took up arms after taking the oath of neutrality on the ground that they were forced by the British to violate the oath and that the compact once thus broken by the British, the Boers were no longer bound by it. He waxes warm when he speaks of the devastation wrought by the British army, and is very indignant over the treatment accorded the Boer women and children, and says that upon his return to South Africa he will be able to collect ample material to sustain his charges. He tells us of British soldiers, when attacked by him, taking shelter behind Boer women and children, of a laager of women deliberately shelled by artillery, and of children torn from their mothers and carried away by British soldiers.

His language is distinguished by moderation in speaking of such unpleasant subjects. His admiration for the British army, however, is evidently not very great, though his tone is generally friendly, and he even comes to the rescue of General Buller who, he says, had more difficult work cut out for him than any other British General in South Africa. He calls the British system of scouting foolish, and promises to write a book on that subject upon his return. He claims the British never knew or learned how to scout until they employed Boers for this work, and they, he says, proved his undoing.

Throughout the book the language is temperate and simple, and this very simplicity adds force to General DeWet's statements. As it stands it is a work to be recommended to the men and boys of any nation as a record of brilliant deeds and of the highest patriotism. As a military man General DeWet claims our serious attention, for he possessed to a remarkable degree courage and decision, judgment and cunning, perseverance and self-restraint. He will remain the hero of his race, and deservedly so, as the bold raider who rode through South Africa at will in the face of an immense army, who replenished his larder and armory from that of the enemy, who evaded and baffled his enemy a thousand times, and as a patriot who carried the struggle for independence to its logical—and bitter—conclusion.

CARL REICHMANN,
Capt. 17th Infantry.

* *Three Years' War.* By Christiaan R de Wet. N. Y.: Scribner's, 1902.



Our Exchanges.

Military.

Armée et Marine.—February 8. The Packwheel. The Japanese Army and Navy. The Kingfisher, Don Carlos. February 15.—The Medical School of Pondichery. German Military Telegraphy. The Jump of the Horse. Construction for the Navy in 1903. March 1.—The Last Invalids. Affairs at Venezuela. Reform in Recruiting and in the Instruction of Marine Officers in England. March 15.—The Colored Troop of Hayti. The Recruiting of the Officers. The International Peace Tribunal.

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La Belgique Militaire.—February 15. The Cavalry Examinations for Admission to the Military Academy. The Festivities of the 15th Dragoons. February 22.—List of the Principal Orders and Circulars. The Reorganization of Our Field Artillery. Cavalry Commission. The Three Boer Heroes. March 15.—Tactical Themes. The Federation of the Old Soldier. Remount of the Officers.

Proceedings of the Royal Artillery Institution.—October, November, and December, 1902. Celestial Photography. Officers' Despatch Riding Competition at Salisbury Plain. Concerning the Field Howitzer. The Typewriting Telegraph and Its Possibilities for Artillery Purposes. An Adjustable Fu e Scale. The Land Defense of a Coast Fortress. Experiences of No. 4 Company, Hong Kong-Singapore Battalion Artillery in North China, 1900. Our Mounted Rifles. Notes on Military Education. Do We Require Field Artillery? The Complement of Sea Power. The Artillery Escort. A

Telescope for Field Artillery. A Recaptured Gun. Long-range Guns with a Field Army. Description of Traveling Target Introduced for the Use of the Yorkshire R. Y. A. Militia at Scarborough. Description of Special Railway Mounting for 6-inch Quick-Firing Gun as Constructed in South Africa in January, 1900. Mobility and Power. Traction for Heavy Field Artillery.

Revue du Cercle Militaire.—February 21. The Missions and the Importance of the Cavalry. The Temporary Regulations Concerning the Firing Tactics of the Infantry. German Military Life. March 7.—Competition for Admission to the Staff College in 1903. Notes on the Defense of Our Coast. The Missions and Importance of the Cavalry. March 14.—The Spanish Army. Notes Regarding Coast Defense. Russia in Military Matters During the Year.

Revue d'Artillerie.—January. The Artillery of the Exposition of Dusseldorf. Firing Manual of the Russian Field Artillery. February.—The Artillery at the Exposition of Dusseldorf. The Adoption of a Field Artillery Gun in the United States.

Revue Militaire des Armées Étrangères.—February. New Maneuvering Regulations for the English Army. The Military Strength of Morocco. The Movements of the Army in 1870-71, and the Lessons They Teach. The Military Academy of Berlin. Studies Regarding the South African War. March.—Studies Regarding the South African War. The Transformation of the Field Artillery Material by the Different Powers. The Movements of the Army, 1870-71, and Their Lessons. The War College of Berlin.

Revue d'Armée Belge.—November-December, 1903. The Reorganization of Our Field Artillery. Studies Regarding the Anglo-Boer War from a Cavalry Standpoint. Cavalry against Artillery.

United Service (New York).—March. The Passing of a High Office. The Story of the Army Gunboats. A Hero of the Old Navy. From Generation to Generation. Campaigning with Kitchener. Tinkering with Officers' Names. Remarkable History of a King's Statue. History of the Loyal Legion.

United Service Gazette (London).—February 14. The Delhi Durbar. The Army Problem. Military Charities. Delhi Army Maneuvers. Royal Naval Benevolent Society. The Grenadier Guard's Scandal. Disembarkation in the Presence of the Enemy. February 21.—The Warship Trials of 1902. The Naval Expenditure of the Great Powers. New Musketry Regulations. February 28.—Lloyd's Patriotic Fund. The Military Racquets Championship. The Naval Engineer Question. The Army Corps Scheme. The Canadian Militia. Army Signaling in 1902. Military and Martial Law. Military Education and Character. March 7.—The Use of Modern Artillery in Battle. Armor-piercing Projectiles. The Health of the Navy. The Military Uses of Astronomy. The Royal Garrison Regiment. March 14.—Army Recruiting in 1902. Naval Maneuvers, 1902. The Use of Modern Artillery in Battle (continued). March 21.—The Grenadier Guards' Scandal. Lord Roberts and Cavalry Training. Naval Reserves.

United Service Magazine (London.)—March. Imperial Policy. Imperial Federation. The Admiralty Scheme. Naval Gunnery on the China Station. The Navy and the Press. Some Elements of Army Reform. Strategy and Tactics in the Mountain Ranges. Arms and Methods in War. The Prevention of Enteric Fever in War. Expenses of Officers. Garrison Classes in India. Rose's Napoleon.

Miscellaneous.

Anales de la Sociedad Cientifica Argentina.—January and February.
Boletin Del Centro Naval: regular issues, to date.
Bulletin of the American Geographical Society: regular issues, to date.
Current Literature: regular issues, to date.
Journal of the Western Society of Engineers.—January and February.
La Engeneira: regular issues, to date.
La Revue Technique: regular issues, to date.
Political Science Quarterly: regular issues, to date.
Proceedings of the American Society of Civil Engineers: issues, to date.
Pennsylvania Magazine of History and Biography: regular issues, to date.
Review of Reviews: regular issues, to date.
Rivista Di Artiglieria E. Genio.—February and March.
The Scientific American: regular issues, to date.
The Dial: regular issues, to date.
The Popular Science Monthly: regular issues, to date.
The Seventh Regiment Gazette: regular issues, to date.
The Medical Record: regular issues, to date.
The Century Magazine: regular issues, to date.
The Army and Navy Journal: regular issues, to date.
The Army and Navy Register: regular issues, to date.

Received for the Library and Review.

1. *The Non-Commissioned Officer's Guide to Promotion in the Infantry.* Gale & Polden, Ltd., London, England. 1903.

2. *The Army Handbook of Physical Training.* Gale & Polden, Ltd., London. 1903.

3. *Catch Questions in Infantry Training.* Gale & Polden, Ltd., London. 1903.

4. *Physical Drill with Arms Made Easy.* Gale & Polden, Ltd., London. 1903.

5. *"Telling off" and "Posting" a Picquet.* Gale & Polden, Ltd., London. 1903.

6. *Tsimspian Texts.* By Franz Boas. Smithsonian Institution, Bureau of American Ethnology, Washington, Government Printing Office. 1902.

7. *Notes on Kit for West Africa.* By Capt. H. A. Thorne. Gale & Polden, Ltd., London. 1903.

8. *The New International Encyclopædia.* Vol. VII. New York, Dodd, Mead & Co. 1903.

9. *Organization, Equipment, Despatch and Service of Canadian Contingents During the War in South Africa,* 1899-1902. Ottawa, S. E. Dawson. 1902.

The Military Service Institution.

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Membership dates from the first day of the calendar year in which the "application" is made unless such application is made after October 1st, when the membership dates from the first day of the next calendar year.

Initiation fee and dues for first year $2.50; the same amount annually for five years subsequently. After that two dollars per year. This includes the Journal. Life membership $50.

NOTE.—Checks and Money Orders should be drawn to order of, and addressed to, "The Treasurer Military Service Institution," Governor's Island, New York City. Yearly dues include Journal.

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Gold Medal—1903.

First Prize—Gold Medal, $100 and Life Membership.
Second Prize—Silver Medal, Honorable Mention and $50.

I.—The following Resolution of Council is published for the information of all concerned:

Resolved, That a Prize of a Gold Medal, together with $100 and a Certificate of Life Membership, be offered annually by THE MILITARY SERVICE INSTITUTION OF THE UNITED STATES for the best essay on a military topic of current interest, the subject to be selected by the Executive Council, and a Silver Medal and $50 to the first honorably mentioned essay. The Prizes will be awarded under the following conditions:

1. Competition to be open to all persons eligible to membership.

2. Each competitor shall send three copies of his essay in a sealed envelope to reach the Secretary *on or before January 1, 1904*. The essay must be strictly anonymous, but the author shall adopt some *nom de plume* and sign the same to the essay, followed by a figure corresponding with the number of pages of MS.; a sealed envelope bearing the *nom de plume* on the outside and enclosing full name and address, should accompany the essay. This envelope to be opened in the presence of the Council after the decision of the Board of Award has been received.

3. The prize shall be awarded upon the recommendation of a Board consisting of three suitable persons chosen by the Executive Council, who will be requested to designate *the essay deemed worthy of the prize;* and also in their order of merit those deserving of honorable mention.

In determining the essay worthy of the prize, the Board will be requested to consider its professional excellence, usefulness and valuable originality, as of the first importance, and its literary merit as of the second importance. Should members of the Board determine that no essay is worthy of the prize, they may designate one or more essays simply as of honorable mention; in either case, they will be requested to designate one essay as first honorable mention. Should the Board deem proper, it may recommend neither prize nor honorable mention. Should it be so desired, the recommendation of individual members will be considered as confidential by the Council.

4. The successful essay shall be published in the Journal of the Institution, and the essays deemed worthy of honorable mention shall be read before the Institution, or published, at the discretion of the Council, which reserves the right to publish any other essay submitted for a prize, omitting marks of competition.

5. Essays must not exceed fifteen thousand words, or thirty-five pages of the size and style of the JOURNAL (exclusive of tables), nor contain less than 10,000 words.

II.—The Subject selected for the Prize Essay of 1903, is

"ESPRIT DE CORPS: HOW IT MAY BE STRENGTHENED AND PRESERVED IN OUR ARMY, UNDER THE PRESENT ORGANIZATION AND METHOD OF PROMOTION."

III.—The Board of Award chosen for the year 1903 is as follows:

MAJOR-GENERAL ADNA R. CHAFFEE, U. S. Army.
BRIG.-GEN. GEORGE L. GILLESPIE, Chief of Engineers.
COLONEL ALBERT L. MILLS, Supt. U. S. M. Academy.

GOVERNOR'S ISLAND, N. Y.
Jan. 1, 1903.

T. F. RODENBOUGH,
Secretary.

The Seaman Prize.

MAJOR LOUIS L. SEAMAN, M.D., LL.B. (late Surgeon, 1st U. S. Volunteer Engineers), has founded a prize in the MILITARY SERVICE INSTITUTION OF THE UNITED STATES by contributing annually

One hundred dollars in Gold

for the best Essay, subject to be named by himself, and to be approved by the Executive Council.

The subject proposed and adopted (December 10) for 1903 is:

"HOW BEST TO PROMOTE RIFLE PRACTICE AMONG OUR COUNTRYMEN IN TIME OF PEACE AS A PREPARATION FOR WAR."

Competition is open to all Officers or ex-Officers of the Army, Marines, Volunteers or National Guard.

Three copies of the Papers on the subject must be submitted to the Secretary of the Institution, to reach his office not later than Nov. 1, 1903. Each Essay must be limited to 15,000 words, exclusive of statistics.

All other conditions will apply as those connected with the Annual (Military Service Institution) Gold Medal Prize.

The gentlemen chosen by the Council to constitute the Board of Award for the year 1903, are:—

BRIG.-GEN. CHARLES DICK (late U. S. V.).
BRIG.-GEN. GEORGE W. WINGATE (late N. G., S. N. Y.).
MAJOR STANHOPE E. BLUNT, Ordnance Dept., U. S. A.

GOVERNOR'S ISLAND, N. Y.
Jan. 1, 1903.

T. F. RODENBOUGH,
Secretary.

Prizes for Short Papers.

Extract from the Minutes of a Stated Meeting of the Executive Council of the Military Service Institution of the United States, Major General Brooke, V. P., in the Chair, held at Governor's Island, N. Y. H., March 14, 1902.

* * *

Resolved: That the regulations governing the award of Annual Prizes be and they are amended as follows:

Hancock (Infantry) Prize.

The Hancock Prize: $50, and Certificate of Award; and $25, and Certificate of Award: to be given for the best and second best original essays or papers, the awards to be made under existing regulations for the Gold Medal, excepting that the papers shall contain not less than 2,500 words nor more than 12,000 words, and that but one copy of each paper shall be required from the author; said essays to be critical, descriptive or suggestive, on subjects directly affecting the Infantry or Foot Service, which have been published in the JOURNAL of the Institution during the twelve months ending February 28 of each year and which have not been contributed in whole or in part to any other association, nor have appeared in print prior to their publication by the Institution, nor have been published in the JOURNAL in any previous year, and excluding essays for which another prize has been awarded. The certificate of award to be signed by the President and Secretary of the Institution and the award to be made upon the recommendation of a committee of three members of the Institution, not members of the Executive Council, two of whom shall be Infantry officers to be appointed, annually, by the President; the award to be made and announced not later than May 1 of each year.

Fry (General) Prize.

The Fry Prize: to be the same as the Hancock Prize and awarded upon the recommendation of a board of three members, not members of the Executive Council, under the same regulations for papers or essays appearing in the JOURNAL during the twelve months ending August 31 of each year, on subjects directly affecting the military service and not otherwise provided for; with the announcement not later than November 1.

Buford (Cavalry) Prize.

The Buford Prize: to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Cavalry officers, for papers published in the JOURNAL during the twelve months ending April 30 of each year, on subjects directly affecting the Cavalry or Mounted Service; with announcement not later than July 1.

Hunt (Artillery) Prize.

The Hunt Prize: to be similar to the Hancock Prize, and to be awarded on the recommendation of a board of which two members shall be Artillery officers, for papers published in the JOURNAL during the twelve months ending June 30 of each year, on subjects directly affecting the Artillery Service; with announcement not later than September 1.

Gold Medallists

and others to whom Prizes have been awarded.

(*G. M., Gold Medal; F. H. M., First Hon. Mention; S. H. M., Second Hon. Mention*).

1880. *G. M.* **Gibbon, John;** Col. 7th U. S. Infantry, and Bvt. Brig.-Gen'l U. S. A.
F. H. M. **Wood, C. E. S.;** Lieut. 21st U. S. Infantry.
Subject.—"Our Indian Question."

1881. (No subject for competition.)

1882. *G. M.* **Lazelle, Henry M.;** Lieut.-Col. 23d U. S. Infantry (now Colonel retired).
F. H. M. **Greene, F. V.;** Capt. Corps of Engs., U. S. A.
Subject.—"The Important Improvements in the Art of War During the Past Twenty Years, and their Probable Effect on Future Military Operations."

1883. *G. M.* **Wagner, Arthur L.;** Lieut. 6th U. S. Inf. (now Col. A. A. G.)
F. H. M. **Michaelis, O. E.;** Captain Ordnance Dept., U. S. A.
Subject.—"The Military Necessities of the United States, and the Best Provisions for Meeting Them."

1884. *G. M.* **Price, Geo. F.;** Captain 5th U. S. Cavalry.
F.H.M. **Dudley, Edgar S.;** Lieut. 2d U. S. Art. (now Lt. Col. J. A. G.)
Subject.—"The Necessity for Closer Relations Between the Army and the People, and the Best Method to Accomplish the Result."

1885. *G. M.* **Woodhull, A. A.;** Bvt. Lieut.-Col., M.D. (now Colonel retired).
F. H. M. **Dodge, R. I.;** Colonel 11th U. S. Infantry.
Subject.—"The Enlisted Soldier."

1886. *G. M.* **Woodruff, Thos. M.;** Lieut. 5th U. S. Infantry.
F. H. M. **Schenck, A. D.;** Lieut. 2d U. S. Artillery (now Major A. C.).
Subject.—"Our Northern Frontier."

1887. *G. M.* **Sharpe, Alfred C.;** Lieut. 22d U. S. Inf. (now Major A. A. G.)
F. H. M. **Sanger, Wm. Cary;** Q. M. 2d Brig. Staff, N. G. S. N. Y. (now Assistant Secretary of War).
Subject.—"Organization and Training of a National Reserve for Military Service."

1888. (No Prize awarded.)
Subject.—"The Danger to the Country from Lack of Preparation for War."

1889. *G. M.* **Read, G. W.;** Lieut. 5th U. S. Cavalry (now Capt. 9th Cav.).
Subject.—"A Practical Scheme for Training the Regular Army in Field Duties for War."

1890. (No subject for competition.)

1891. *G. M.* **Reed, H. A.;** Lieut. 2d U. S. Artillery (now Capt. Art'y Corps).
F. H. M. **Pettit, J. S.;** Capt. 1st U. S. Infantry (now Major I. G. D.)
Subject.—"The Terrain in its Relations to Military Operations."

1892. *G. M.* **Stuart, S. E.;** Lieut. Ordnance Dept., U. S. A.
Subject.—"The Army Organization best Adapted to a Republican Form of Government, which will Ensure an Effective Force."

1893. *G. M.* **Scriven, G. P.;** Captain (now Major) Signal Corps, U. S. A.
F. H. M. **Hamilton, W. R.;** Lieut. 5th U. S. Artillery (now Capt. A.C.).
Subject.—"The Nicaragua Canal in Its Military Aspects."

1894. *G. M.* **Ellis, E. A.;** Captain 8th U. S. Cavalry.
F. H. M. **Steele, M. F.;** Lieut. 8th U. S. Cav. (now Capt. 6th Cav.).
Subject.—"Discipline; Its Importance to an Armed Force, and the Best Means of Promoting and Maintaining it in the United States Army."

1895. *G. M.* **Sharpe, H. G.;** Captain (now Colonel) Sub. Dept., U. S. A.
Subject.—"The Art of Supplying Armies in the Field, as Exemplified During the Civil War."

1896. *G. M.* **Pettit, J. S.**; Captain (now Major I. G. D.) 1st U. S. Inf.
F. H. M. **Hill, R. G.**; Lieut. 20th U. S. Infantry.
Subject.—" The Proper Military Instruction for our Officers. The Method to be Employed, its Scope, and Full Development."

1897. *G. M.* **Foote, S. M.**; Lieut. 4th U. S. Artillery (now Capt. Art'y C'ps).
*F. H. M.** **Glassford, W. A.**; Capt. (now Major) Signal Corps, U.S.A.
Subject.—" Based on the Present Conditions, and Past Experiences, How Should our Volunteer Armies be Raised, Organized, Trained, and Mobilized for Future Wars? "

1898. (No Essays received in competition.)
Subject.—" Our Water Boundaries, and our Interior Waterways; How to Utilize and Defend them; Their Influence in Case of Invasion."

1899. *G. M.* **Britton, Edward E.**; Colonel N. G. N. Y.
*F. H. M.** **Barry, Herbert**; Lieut. (now Capt.) Squad. A., N. G. N. Y.
Subject.—" In What Way Can the National Guard be Modified, so as to Make it an Effective Reserve to the Regular Army in Both War and Peace."

1900. (No Gold Medal awarded.)
*F. H. M.** **Allen, H. T.**; Capt. 6th U. S. Cav. (now Brig. Gen. P. C.)
Subject.—" The Organization of a Staff Best Adapted for the United States Army."

1901. *G. M.* **Stuart, Edwin R.**; Lieut. Corps of Engineers, U. S. A.
Subject.—" Are Disappearing Guns Essential to the Defense of our Seaports?"

1902. *G. M.* **Stuart, Edwin R.**; Lieut. Corps of Engineers, U. S. A.
F. H. M.† **Mott, T. Bentley**; Captain Artillery Corps, U. S. A.
S. H. M. **Evans, Robert K.**; Major Infantry, A. A. G., U. S. A.
Subject.—"Organization and Functions of a Bureau of Military Intelligence."

The Seaman Prize.

1900. **Munson, E. L.**; Captain Medical Department, U. S. A.
Subject.—" The Ideal Ration for an Army in the Tropics."

1901. **Rhodes, Charles D.**; Captain 6th U. S. Cavalry.
Subject.—" The Utilization of Native Troops in our Foreign Possessions."

Hancock (Infantry) Prize.

1902. (*1st*) **Steele, M. F.**; Captain 6th U. S. Cavalry.
Subject.—" Some Army Defects."
(*2d*) **Lewis, E. M.**; Captain 20th U. S. Infantry.
Subject.—" Discipline."

Buford (Cavalry) Prize.

1902. (*1st*) **Allen, H. T.**; Captain 6th U. S. Cavalry.
Subject.—" Cavalry Training."
(*2d*) **Reichmann, Carl**; Captain 17th U. S. Infantry.
Subject.—" Campaign, Orange Free State, 1900."

Hunt (Artillery) Prize.

1902. (*1st*) **Chester, James**; Major of Artillery, Retired.
Subject.—" Artillery Organization."
(*2d*) **Maxim, Hudson.**
Subject.—" Maximite."

Fry (General) Prize.

1902. (*1st*) **Kenan, Owen T.**; late Captain U.S.V.
Subject.—" The American Soldier in the Tropics."
(*2d*) **Pierce, Palmer E.**; Captain 13th U. S. Infantry.
Subject.—" Squad Formation."

* and Honorarium, $50. † Silver Medal and $50.